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ELEMENTS

OF

BOTANY.

PART I.

CLASSIFICATION.

BY

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MEMBER OF THE UNIVERSITY OF CAMBRIDGE, AND OF THE ROYAL
LONDON COLLEGE OF PHYSICIANS, &c. &c. &c.

VOL. I.

London:

Printed for the Author, as Prizes in the Royal Botanical Lottery, by J. WHITING, Finsbury Place

1812.

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DEDICATION.

TO THE

REV. THOMAS MARTYN, M. A. F. R. S.

REGIUS PROFESSOR OF BOTANY IN THE UNIVERSITY OF
CAMBRIDGE, AND VICE-PRESIDENT OF THE
LINNÆAN SOCIETY, &c. &c.

MOST WORTHY PROFESSOR!

It gives me the highest satisfaction to have lived at a period when Botany has made such great progress under your auspices; when the world has been favoured with the best elementary works from your pen. I need not mention here, "*Letters on Botany, addressed to Ladies,*" and your "*Language of Botany;*" immortal works! which have created such an universal taste for the science, with the correctest notions;—but to crown you "*Prince of Botanists,*" a gigantic labour presented itself to your enlarged understanding, the revision of the "*Gardener's Dictionary, by Miller;*" which immense undertaking would have appalled any other heart but your's, which, indeed, is never wearied in useful or benevolent exertions, and fortunately for the world, by Providence granting you health and life, has been now accomplished with a skill, a diligence, and knowledge, such as must astonish an expecting and admiring world, and weave round your name laurels that will never fade; and afford you also the present satisfaction of having, like LINNÆUS, lived to some useful purpose, of having done more than any *one individual* ever accomplished before: and when I reflect, that I had the felicity of being formerly your pupil at Cambridge, it recalls back to my recollection the many obligations I owe to you, both public and private—your admirable instructions—your parental attentions to me, as well as to all your pupils, who now look up to you not only as *pre-eminent* in Botany, but as the *best of men;* so that when you shall be called to another *Paradise*, for your learning hath made this an earthly one, having so well displayed the power, wisdom, and goodness of GOD in the vegetable world, you will smile upon the happiness you are leaving behind, and with calm serenity will shake off the earthly coil, and put on immortality, and hear those rapturous words, "*Well done, thou good and faithful servant, enter thou into the joy of thy Lord.*" To you, most venerable Professor, the mention of *death*, which we are so selfish as to hope is yet far distant from you, hath "no terror in the sound," nor needs any excuse; for should this DEDICATION afford you any satisfaction, as being a *testimonial* of *grateful respect* from a favourite pupil, the latter part of it will be by you esteemed the most pleasing, so superior rise the *plaudits* to characters, who *conquer Nature*, not *nations;* and the names of *such Worthies* will live in remembrance and repute when *these Monsters (Warriors) in the forms of men* shall be either forgotten or despised. For at this period, *one Monarch* dares, in the face of that religion, which teaches no difference amongst men, all proceeding from one common Father, in Heaven, to wage universal war only from motives of a cursed ambition! All kinds of crimes are every hour accomplishing on the ensanguined theatre of cruel war! The man of sensibility, his heart overwhelmed with grief and shame, beholds such atrocious scenes with horror! There is no counterpart in Nature to compare with such Men. *Tigers* do not even gorge themselves with the blood of *Tigers!*

> ....parcit
> Cognatis maculis similis fera....
>
> JUVENAL.

BOTANY indeed should particularly enter into the education of *Princes;* then they would see, that each country has its peculiar productions, and the obligations nations stand in to different climes, connected together by reciprocal wants, and knit to each other by the blessings of *commerce;* then they would learn to respect other countries, and make a *garden,* not a *wilderness,* of this world: a delightful pursuit would engage their attention; wars would cease from the earth, and peace with happiness reign perpetual. To accomplish so desirable a purpose, your Works must do more than those of any other person; and your admirable "*Flora Rustica,*" and "*Gardeners' Dictionary,*" will instruct how each plant is to be cultivated; and that you may live to see such Result from your Publications, is the ardent Prayer of one who has now the honour to sign himself,

DEAR PROFESSOR,

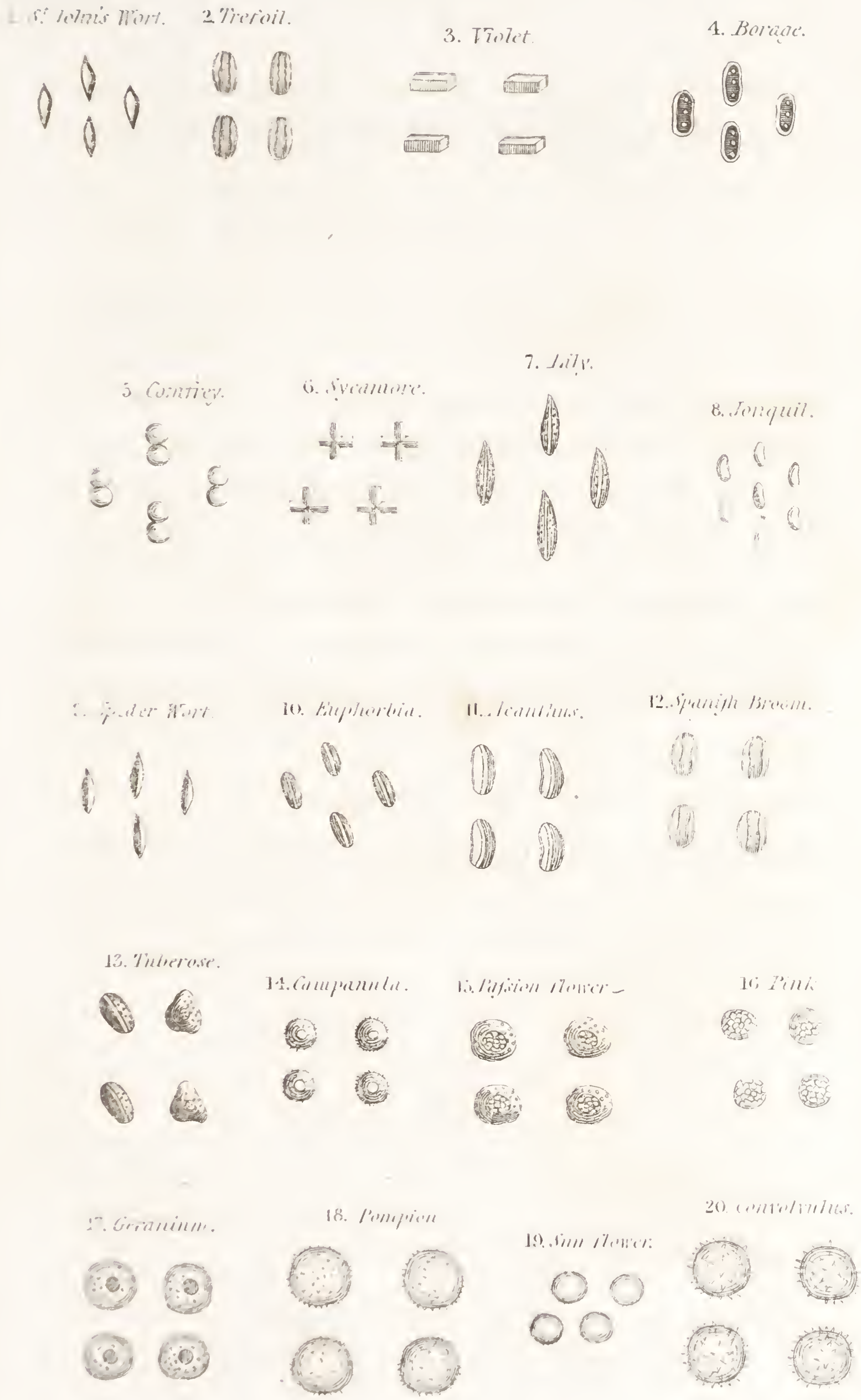
WITH EQUAL RESPECT, ESTEEM, AND GRATITUDE,

YOUR OBLIGED AND EVER DEVOTED FRIEND,

ROBERT JOHN THORNTON, M.D.

Hinde Street, Manchester Square,
May 1, 1810.

FARINA OF FLOWERS.


1. S.t John's Wort.
2. Trefoil.
3. Violet.
4. Borage.
5. Comfrey.
6. Sycamore.
7. Lily.
8. Jonquil.
9. Spider Wort.
10. Euphorbia.
11. Acanthus.
12. Spaniſh Broom.
13. Tuberose.
14. Campannula.
15. Paſsion flower.
16. Pink.
17. Geranium.
18. Pompion.
19. Sun flower.
20. convolvulus.

Warner, ſculp.

London, Publiſhed by [illegible] Thwait [illegible] Jan.y 1 1812.

THE CONSTITUENT PARTS OF FLOWERS.

THE fault of all Botanical Works, as far as I am able to judge, is, that they crowd at once too many ideas upon the learner, who soon gets out of his depth; but as the highest eminences are mounted in time, by means of a *ladder*, so we conduct our reader, *step by step*, until he will be able at last to grasp the whole Science. The mode of ANALYSIS and SYNTHESIS will be pursued, as far as it can be done, and we shall proceed on from general ideas to particular ones, as the most clear and certain method of acquiring real knowledge. Thus after our ANALYSIS, proceeds the

SYNTHESIS, viz.

FLOWERS, although apparently so diversified, consist but of *eight* parts.

I. The PISTIL (*Pistillum*), in the centre of the flower.

II. The STAMEN (*Stamen*), exterior to this.

Both these are *projecting* bodies, being *extensions* (according to LINNÆUS) the *first*, of the *pith;* and the *second*, of the *wood*.

The PISTIL is discriminated by a *swollen base*, which is the seed-vessel, or GERMEN, which being opened discloses the seeds.

The STAMEN is discriminated by having a *part which forms* and *contains* coloured *farina*, or *pollen*, hence called an ANTHER by Botanists.

A *perfect* or *complete* PISTIL is composed of three *Parts*:—

1. The STIGMA (*Stigma*), at top, never absent, though sometimes obscure.
2. The STYLE (*Stylus*), elevates the Stigma, not absolutely essential.
3. The GERMEN (*Germen*), or seed-vessel, always present.

An *imperfect* PISTIL has no *Style*.

A *perfect* or *complete* STAMEN is composed of two *Parts*:—

1. The ANTHER (*Anthera*), at top, containing the fertilizing pollen, always present.
2. The FILAMENT (*Filamentum*) elevating the anther, not so essential, being absent in some flowers.

An *imperfect* STAMEN has no *filament*.

When the STAMENS and PISTILS are found together, the flower is then called BISSEXUAL.

When these are separate, being placed in different flowers, the flower is then called UNISEXUAL.

For the protection and nourishment of the CENTRAL ORGANS of vegetables, (viz. the PISTILLA and STAMINA) Nature has usually furnished two other Parts.

III. The COROLLA (*Corolla*), interior.

IV. The CALYX (*Calyx*), exterior to this part.

Both *expanded bodies*, being expansions, the *one* of the *bark*, and the *other* of the *rind*.

These are discriminated not only by their *respective situations*, but by the *greater delicacy* of the COROLLA compared with the CALYX, the former having usually *coloured* PETALS, the latter green LEAVES. These parts are not absolutely essential, some flowers being destitute of one, or both of them.

As an appendage to the Corolla, there is found in some plants—

V. The NECTARY (*Nectarium*), usually for the secreting and containing of honey.

We reckon also as forming the flower—

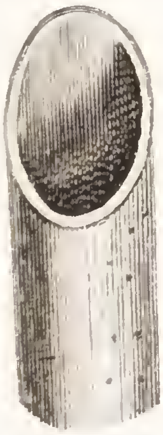
VI. The PERICARP (*Pericarpium*), which is only the *germen enlarged*, filled with *mature seeds*.

VII. The SEEDS (*Semina*), the *rudiments* of the *new plant*, and

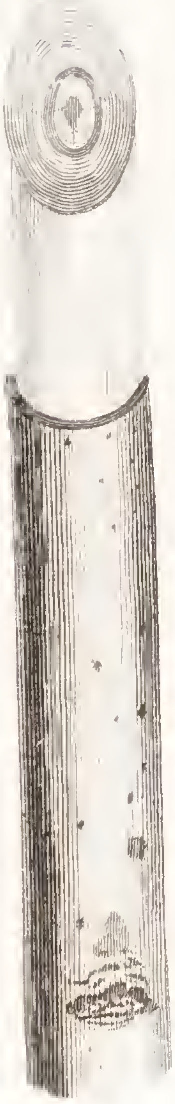
VIII. The RECEPTACLE (*Receptaculum*), the *basis* upon which *all the other parts rest*.

to face back of Plate 4.

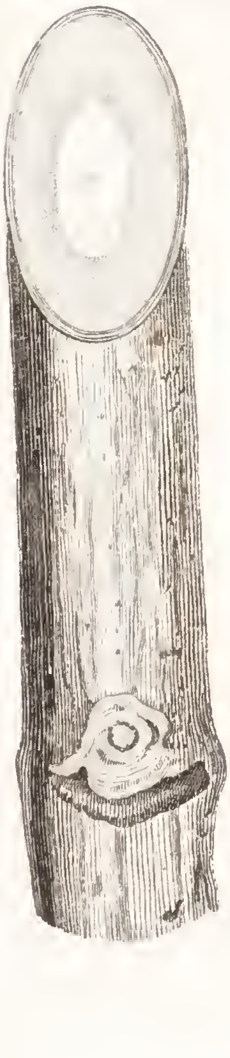
ind & Bark of the Willow stript from the Wood.



The Wood of a branch of Willow and Pith in the Center



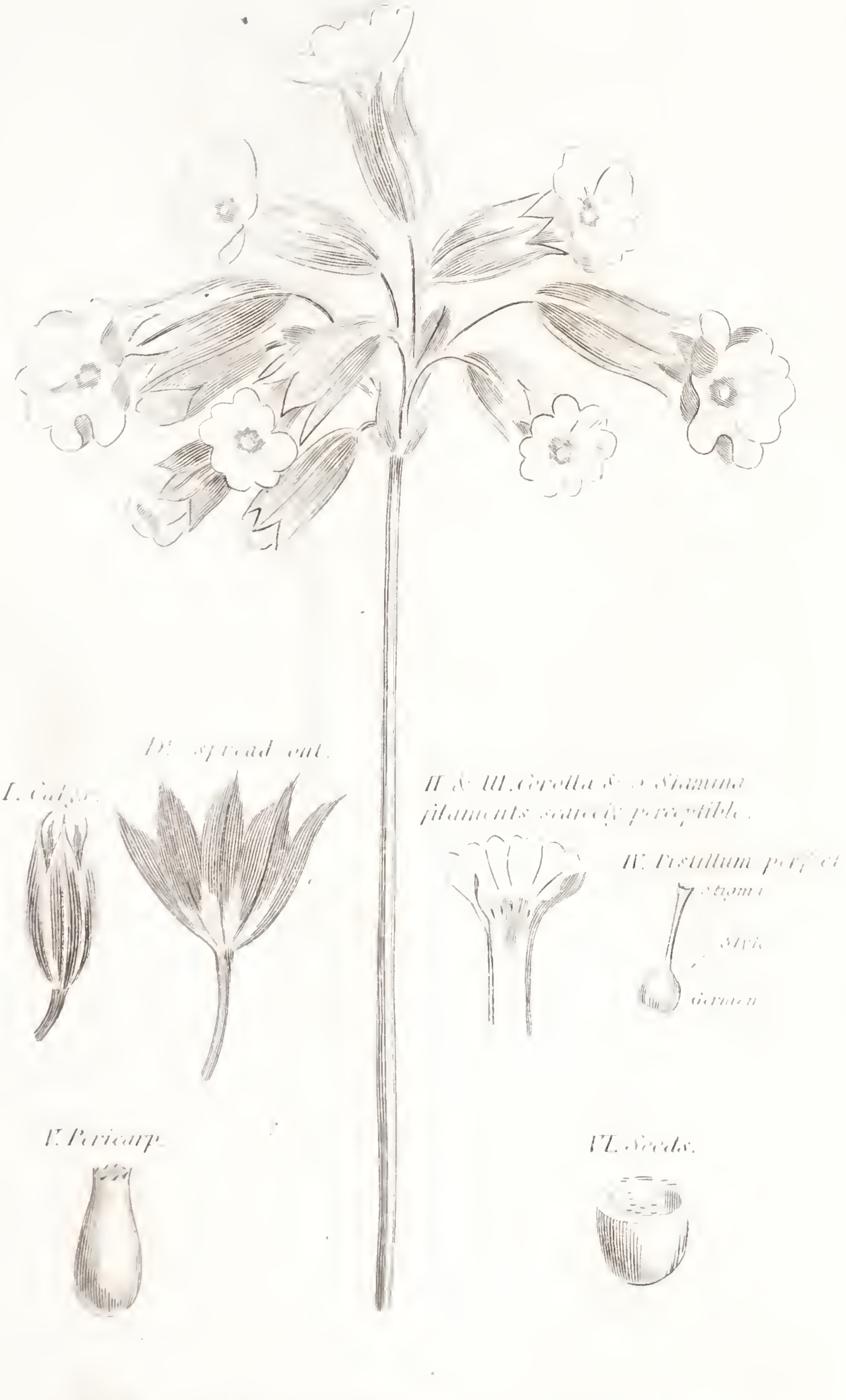
A transverse Section of Elder



London Published by Dr Thornton August 1 1810

PRĪMŬLĂ VĒRĬS.

COMMON COWSLIP.


I. Calyx.
D^o. spread out.
II & III. Corolla & 5 Stamina filaments scarcely perceptible.
IV. Pistillum perfect
stigma
style
germen
V. Pericarp.
VI. Seeds.

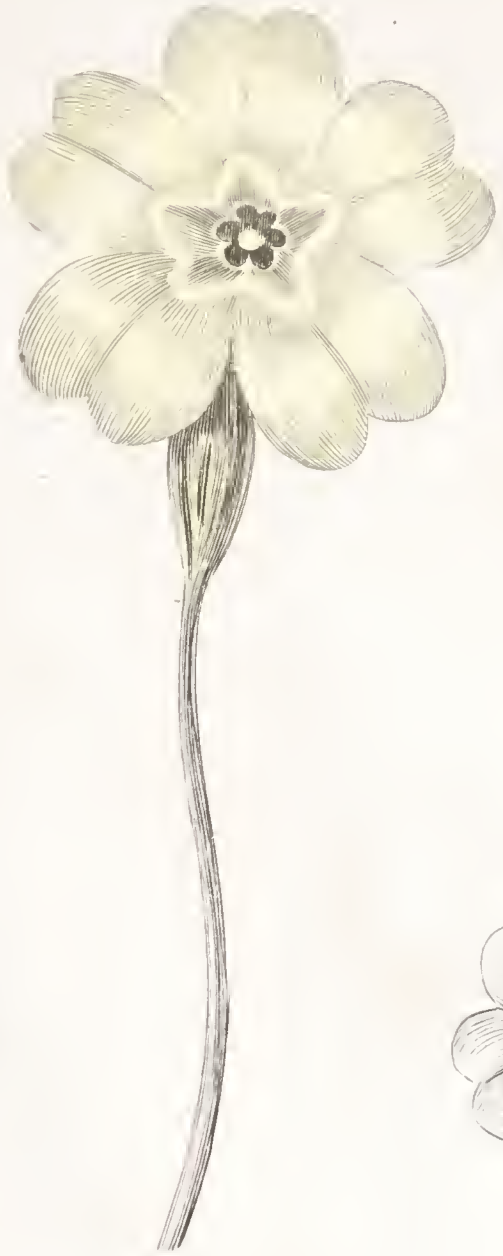
A British Plant common in Meadows
Selected as an illustration being an early visitant
(Flowers biannual)

del. [illegible] sculp.

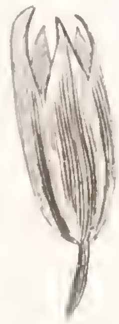
London Published by D^r Thornton Dec^r 1812.

PRĪMŬLĂ VŪLGĀRIS.

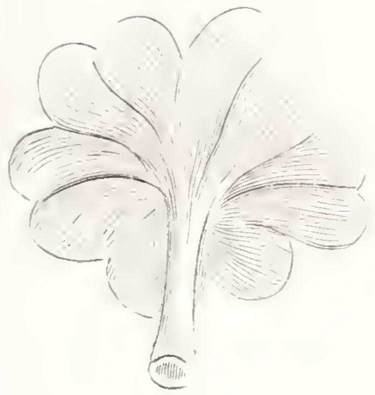
PRIMROSE.



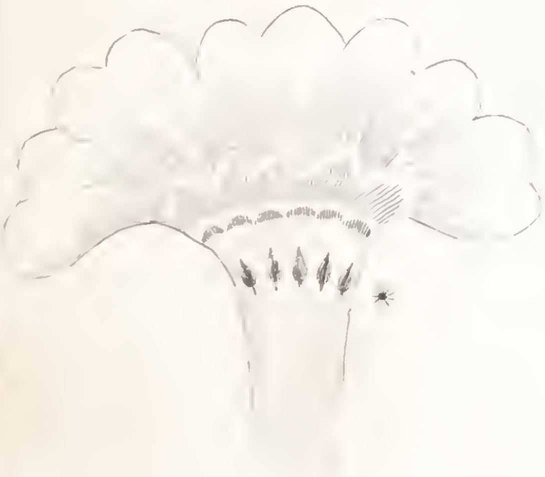
I. Calyx.



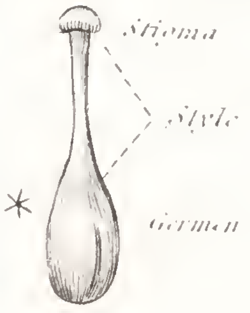
II. Corolla.



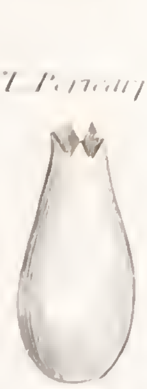
III. Stamina.



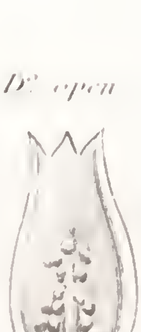
IV. Pistillum perfect.



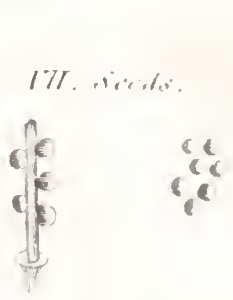
VI. Pericarp



Dº open



VII. Seeds.



hason del.

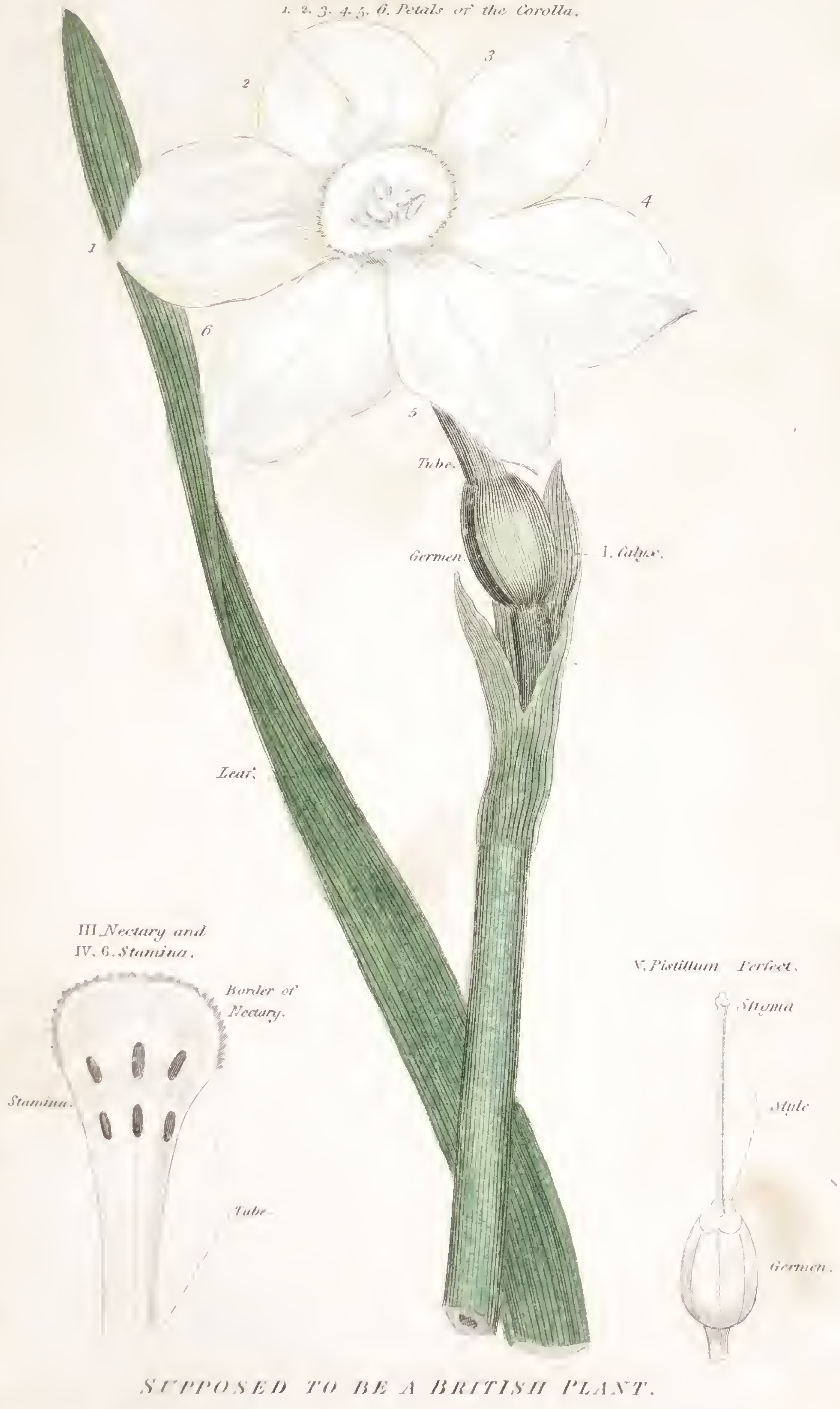
A British Plant common in Meadows.
(Flowers biscxual)

Cooper sculp

[illegible]

NARCISSUS POËTICUS.

POETIC NARCISSUS.



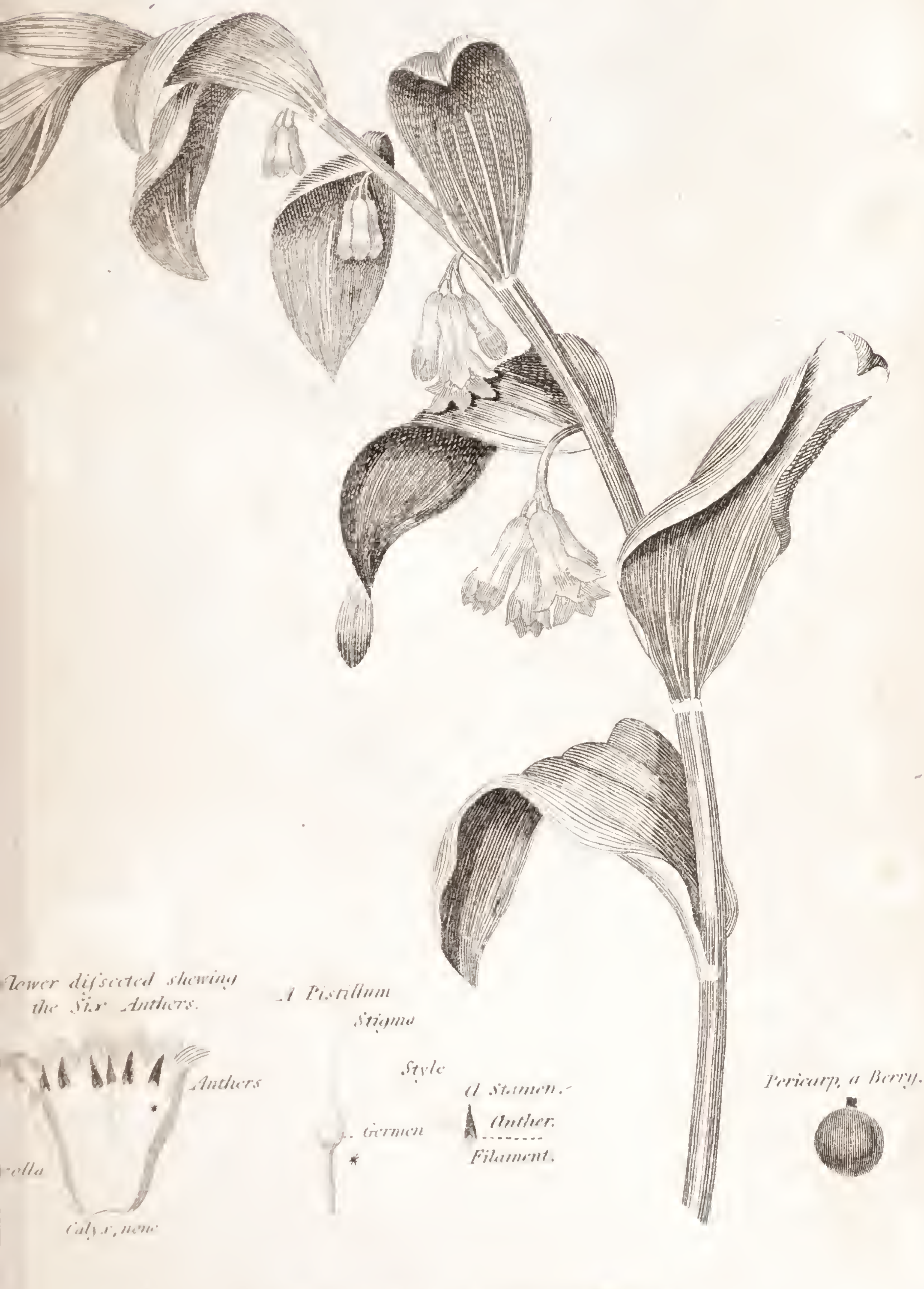
SUPPOSED TO BE A BRITISH PLANT.

Henderson del. *(Flowers bisexual.)* Cooper sculp.

London Published as the Act Directs, by Dr Thornton Dec.r 1. 1810

Convallaria Multiflora.

Common Solomon's Seal



A BRITISH PLANT FOUND IN WOODS

Flowers bisexual

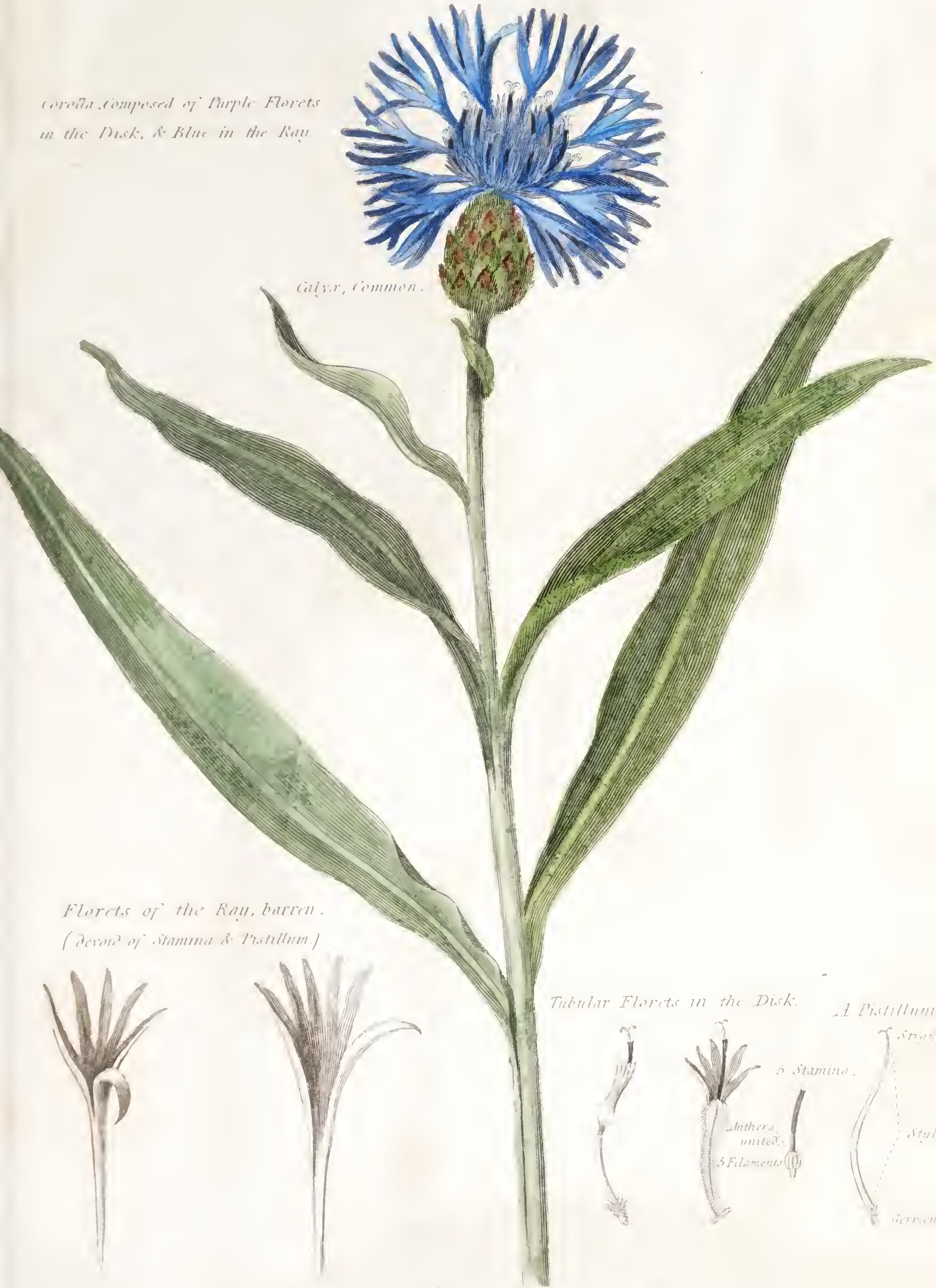
del.

Parkes sculp.

CENTAUREA CYANUS.

COMMON BLUE BOTTLE.

A Compound Flower.

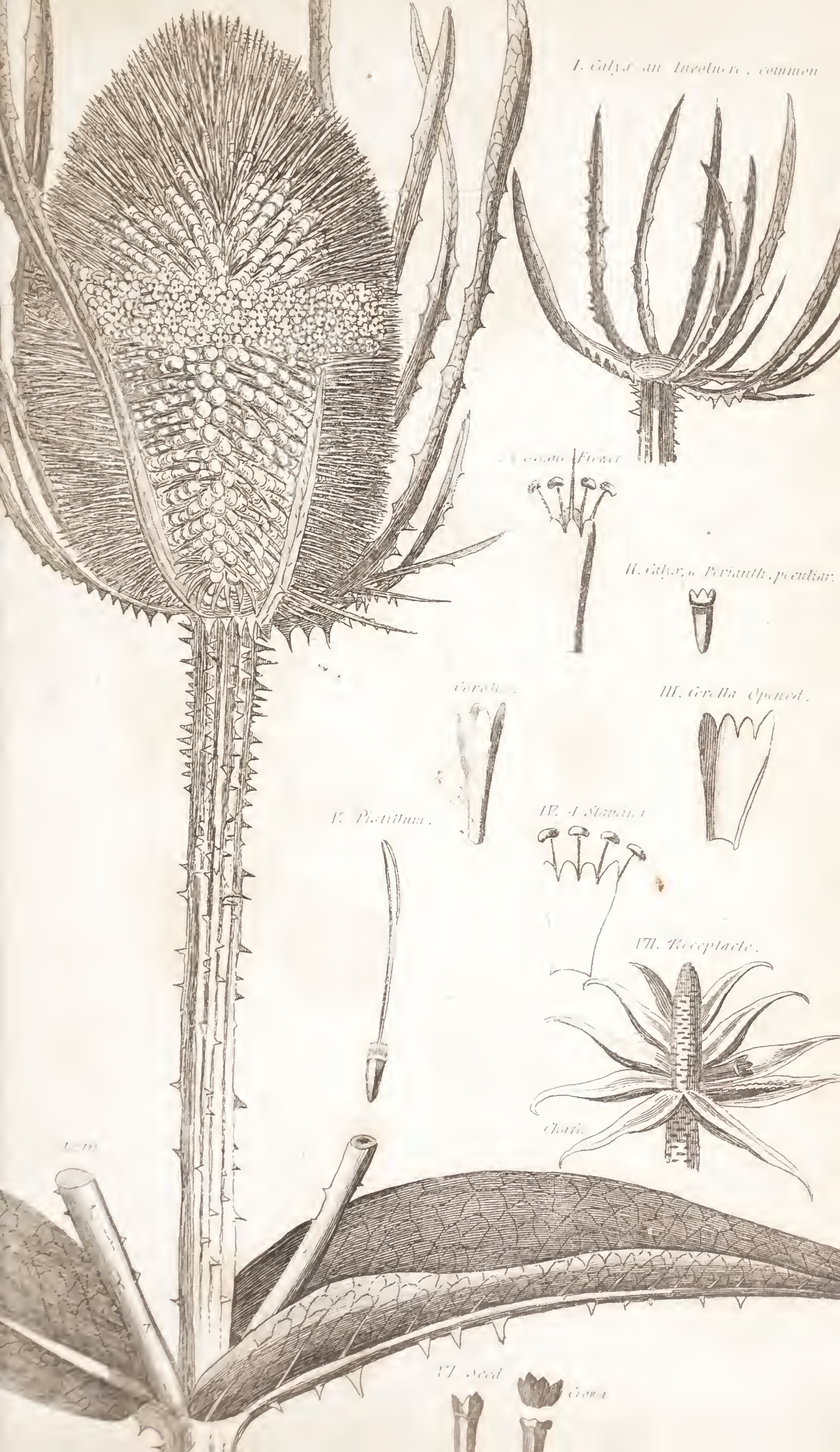

Corolla Composed of Purple Florets in the Disk, & Blue in the Ray.
Calyx, Common.
Florets of the Ray, barren.
(devoid of Stamina & Pistillum.)
Tubular Florets in the Disk.
A Pistillum
Stig
5 Stamina.
Anthers united.
5 Filaments
Styl
Germ

A British Plant found in Corn-fields

(Flowers bisexual & neuter)

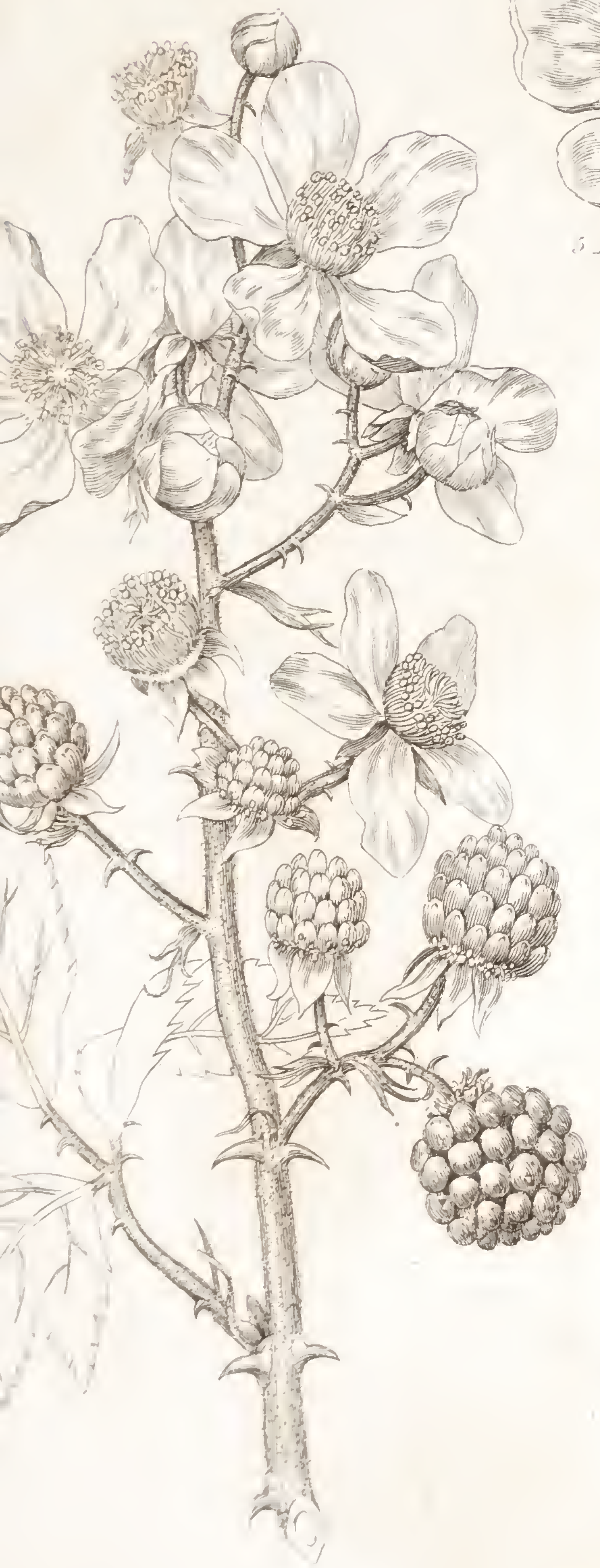
del. Pass sculp

London, Published by D. Thornton, Dec.r 1811.


I. Calyx an Involucre, common
A single Flower
II. Calyx, a Perianth, peculiar.
Corolla.
III. Corolla Opened.
V. Pistillum.
IV. 4 Stamina
VII. Receptacle.
Chaff.
Leaf
VI. Seed
Crown

Rubus fruticosus, or Common Bramble!

A Cutting



Dissections.

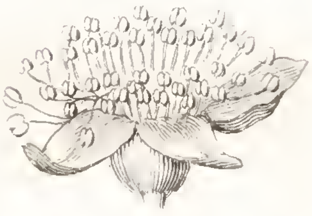
II. Corolla.

5 Petals of the Corolla

I Calyx.

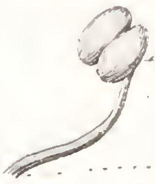
5 Calyx leaves

III. Stamina.



Many Stamina.

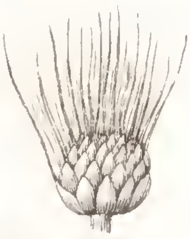
A Stamen magnified.



Each Stamen perfect

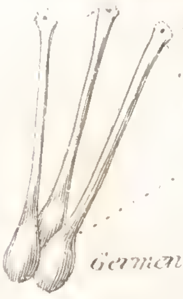
IV. Pistilla.

Pistilla magnified



Many Pistilla

3 Pistilla much magnifie

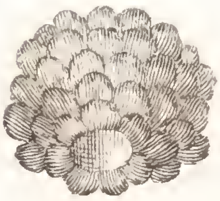


Each Pistillum perfect.

No Nectary

V. Fruit, a Berry.

Dº removed.



VI. Receptacle

One of the component parts of the Berry called by Botanists an Acinus, magnified

Dº magnified.

VII. Seed

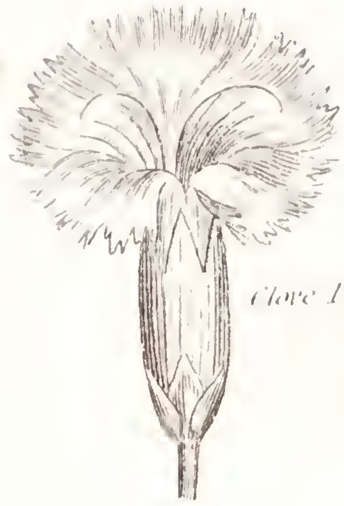
One in each Acinus

Plate 15.

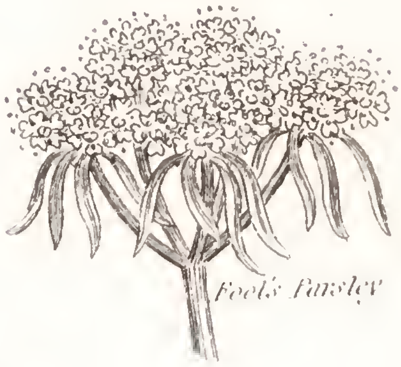
to face page 5

The different kinds of Calyx!

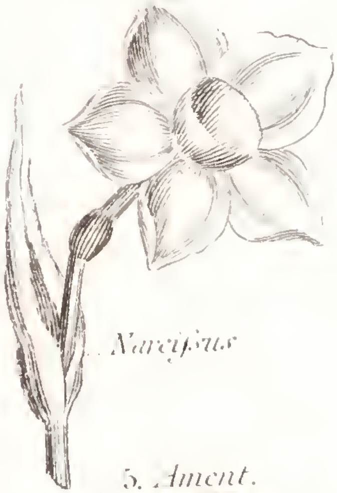
1. Perianth.



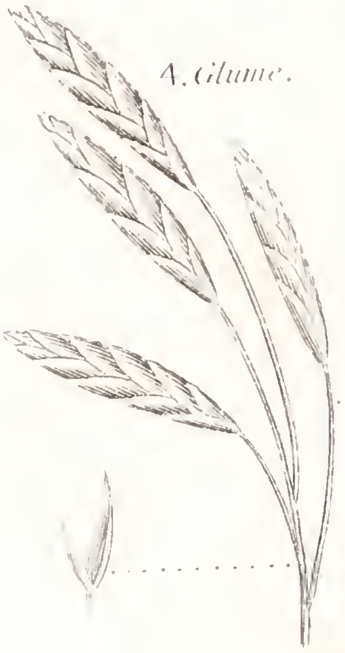
2. Involucre.



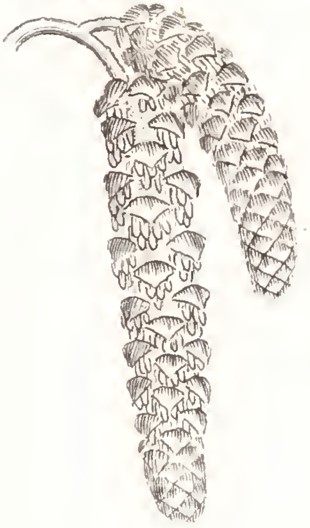
3. Spathe.



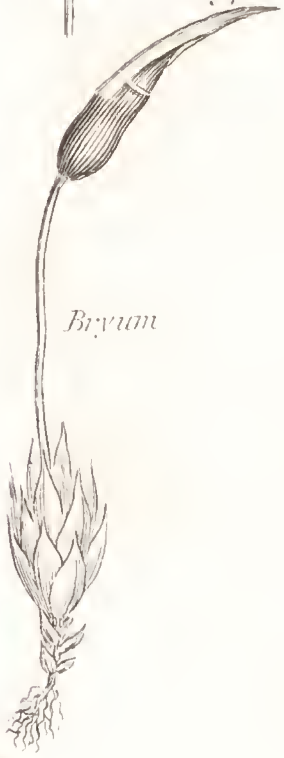
4. Glume.


Tall Fescue Grass.

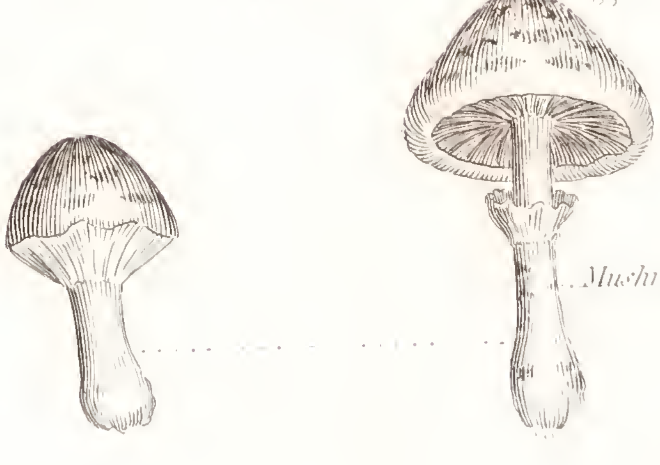
5. Ament.



6. Calyptra



7. Volva.

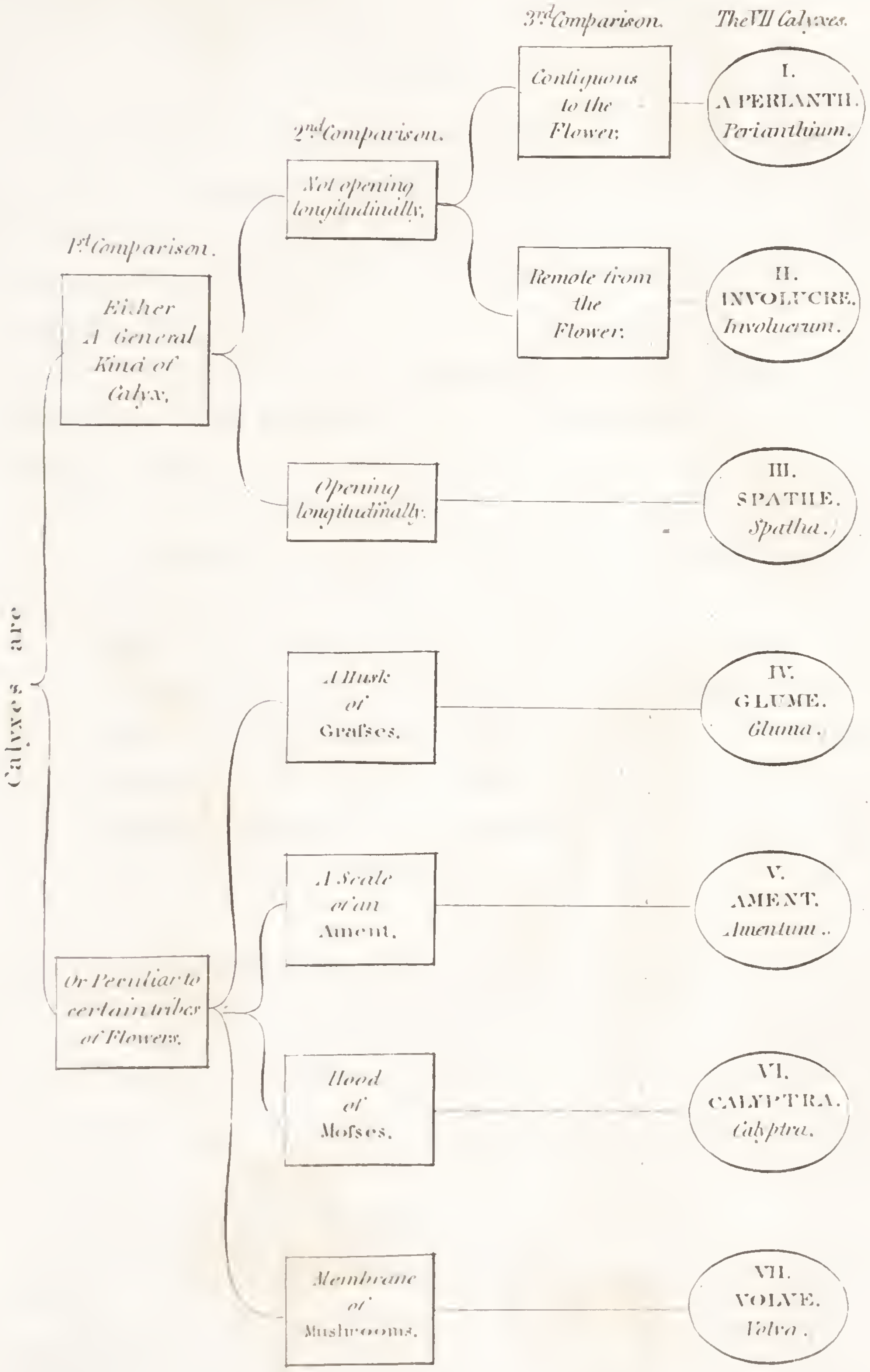


Henderson del.

Wetton sculp.

London Published by Dr. Thornton March [illegible]

Analysis of Calyxes.



THE DIFFERENT KINDS OF CALYXES.

SYNTHESIS.

HAVING formed a general idea of a flower, viz. I. Calyx, II. Corolla, III. Nectary, IV Stamina, V. Pistilla, VI. Pericarp, and VII. Seeds, we will now consider each of these parts, in a more particular manner, for

The term Calyx, like our words, horse, bird, dog, habitation, is a generic word, including several distinct species, thus:

I. Perianth (*Perianthium*), is the outer expanded covering of a flower,—the most common kind of Calyx,[a]—usually green,—sometimes coloured,[b] contiguous to the corolla,—protecting the organs for reproduction in their infant state, sometimes caducous,[c]—often abiding with the fruit,[d]—and sometimes even serving the office of pericarp,[e]—usually single,—occasionally double,[f]—not unfrequently very obscure,[g]—or wholly deficient.[h]

---

[a] Of the 1021 genera of plants, known in the time of Dr. Alston, Professor of Botany at Edinburgh, he observes, 673 had a Perianth; 75, an Involucre; 72, a Spatha; 29, a Glume; 18, an Ament; 3, a Calyptra; 2, a Volva; and 110, no Calyx of any kind.

[b] *Coloured*) as in the *Passion Flower*, *Indian Reed*, &c.

[c] *Caducous*) falling off, as in the *Poppy*, which very quickly loses its two Calyx leaves.

[d] *Abiding*) as in the *Egg Plant*, where it increases to a large size.

[e] *Serving the Office of Pericarp*) the office of seed-vessel, as in the *Nettle*.

[f] *Double*) as in the *Mallow*.

[g] *Obscure*) as in the *Rose-bay*, Rhododendron.

[h] *Deficient*) absent, as in the *Lilies*.

II. INVOLUCRE (*Involucrum*), is a calyx remote from the flower,—most commonly stationed[i] at the foot of a general, or partial, umbel.[k]

III. SPATHE (*Spatha*), a species of calyx, which first involves the infant flowers like a sheath, and then opens longitudinally.

IV. GLUME (*Gluma*), the outer valves, or husks of corn, or grass, enclosing one, or more, florets.

V. AMENT (*Amentum*), small chaffy scales, protecting the florets placed on a thread-like common receptacle.

VI. CALYPTRA (*Calyptra*), the covering of a moss, placed over it, like a cap or bonnet.

VII. VOLVE (*Volva*), a membrane, which involves the fungus in its infant state, and which afterwards appears in a lacerated form on the foot stalk.

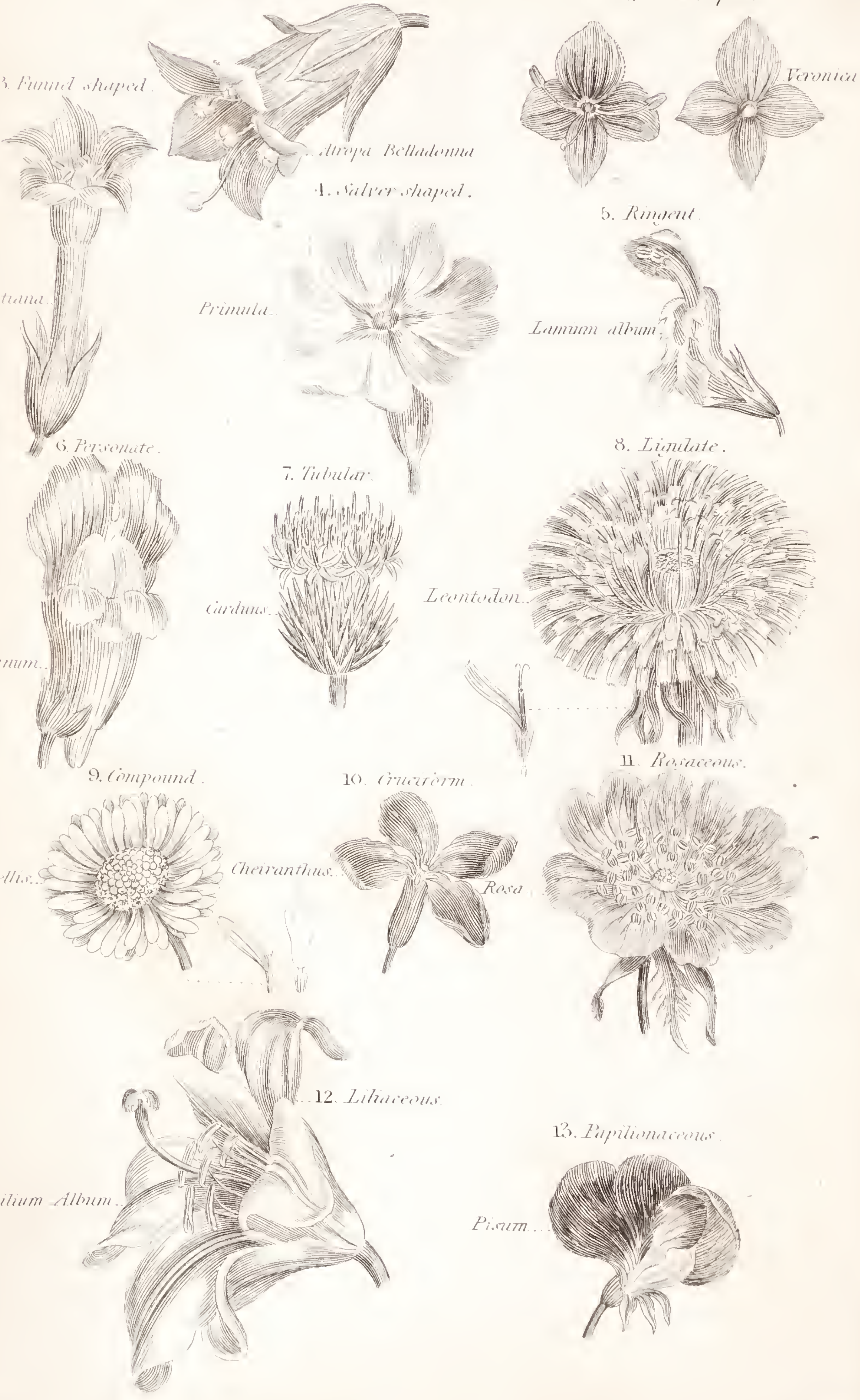
N. B. The CALYX, like other green bodies, possesses a power of secreting from its surface *Vital* or *Oxygen Gas*, whereas, when coloured, like the painted corolla, it then deteriorates the atmosphere, imbibing within itself the vital air, giving out azotic gas, as does also fruit.

---

[i] *Most commonly stationed*) not always, as in *Anemony* and *Passion-Flower*, a somewhat rare occurrence.

[k] *A general and partial Umbel*) Umbelliferous, or Umbel-bearing plants, are of two kinds; from a common centre proceed the peduncles, or flower stalks, like the sticks of an umbrella, and when each peduncle terminates with a flower, as the *Geranium*, *Cowslip*, *Meadia*, the Umbel is then called *general;* but if these peduncles, instead of terminating in a flower, end in a fulcrum, or point, whence other peduncles proceed, and these terminate each in a flower, the Umbel is then called *partial;* and hence the involucre itself is called a *general* or *partial* involucre. *Fool's Parsley* is an example of this last kind.

The different kinds of Corolla.

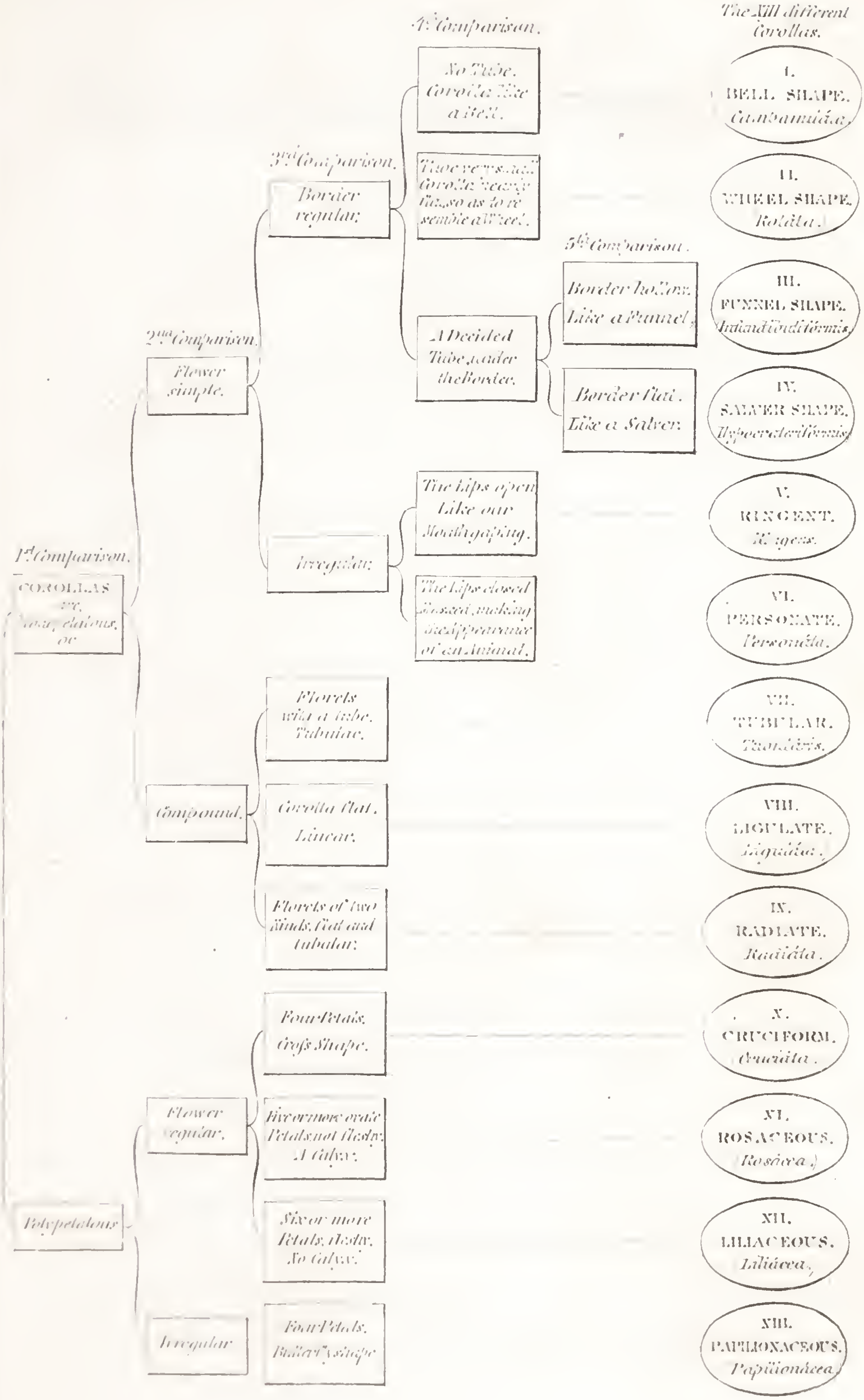

1. Bell shaped.
Atropa Belladonna
2. Wheel-shaped.
Veronica
3. Funnel shaped.
Nicotiana
4. Salver shaped.
Primula
5. Ringent.
Lamium album
6. Personate.
Antirhinum
7. Tubular.
Carduus
8. Ligulate.
Leontodon
9. Compound.
Bellis
10. Cruciform.
Cheiranthus
11. Rosaceous.
Rosa
12. Liliaceous.
Lilium Album
13. Papilionaceous.
Pisum

Henderson del

London Published by Dr. Thornton, March 1.1810.

Watts sculp

Analysis of Corollas.


1st Comparison.
COROLLAS are Monopetalous, or
Polypetalous
2nd Comparison.
Flower simple.
Compound.
Flower regular.
Irregular
3rd Comparison.
Border regular;
Irregular;
4th Comparison.
No Tube. Corolla like a Bell.
Tube very small. Corolla nearly flat, so as to resemble a Wheel.
A Decided Tube under the Border.
The Lips open Like our Mouth gaping.
The Lips closed Bossed, making the appearance of an Animal.
Florets with a tube. Tubular.
Corolla flat. Linear.
Florets of two kinds, flat and tubular:
Four Petals. Cross Shape.
Five or more oval Petals not fleshy: A Calyx:
Six or more Petals, fleshy. No Calyx.
Four Petals. Butterfly shape
5th Comparison.
Border hollow. Like a Funnel;
Border flat. Like a Salver.
The XIII different Corollas.
I. BELL SHAPE. Campanulata.
II. WHEEL SHAPE. Rotata.
III. FUNNEL SHAPE. Infundibuliformis.
IV. SALVER SHAPE. Hypocrateriformis.
V. RINGENT. Ringens.
VI. PERSONATE. Personata.
VII. TUBULAR. Tubularis.
VIII. LIGULATE. Ligulata.
IX. RADIATE. Radiata.
X. CRUCIFORM. Cruciata.
XI. ROSACEOUS. (Rosacea.)
XII. LILIACEOUS. Liliacea.
XIII. PAPILIONACEOUS. Papilionacea.

THE DIFFERENT KINDS OF COROLLAS.

SYNTHESIS.

BESIDES the guardianship of a CALYX, many flowers have also their COROLLA, which has a similar office, and it is not improbable, that these expansions have likewise a reference to the *solar rays*, which these parts either increase by a reflective power, or ward off from the central organs; hence the advantages of the variety in their shapes and colours.

However apparently varied, the Forms of this part of the flower are circumscribed. Thus—

The term COROLLA is a compound idea, made up of the following distinct notions, as—

I. BELL-SHAPED (*Campanulata*), hollowed internally like a bell, often swollen at the sides, and without a tube.

II. WHEEL-SHAPED (*Rotata*), slightly hollow, or the border flat, and with so little a tube as to resemble a wheel on the ground.

III. FUNNEL-SHAPED (*Infundibuliformis*), having the border of the Corolla like a cone, and placed upon a tube, so as to resemble a funnel.

IV. SALVER-SHAPED (*Hypocrateriformis*), having the border of the Corolla flat, and placed upon a tube resembling a salver.

V. RINGENT (*Ringens*), having the border of the Corolla like two open lips, placed upon a tube, resembling a person gaping.

VI. PERSONATE (*Personatæ*), having the border of the Corolla like the lips, the mouth closed, greatly resembling the snout of an animal, also placed upon a tube.

VII. TUBULAR (*Tubularis*), when the floret of a compound flower ends in a tube, the border being five-cleft.

VIII. LIGULATE (*Ligulata*), when the corolla of the floret is linear, i. e. resembles the strap of a shoe.

IX. COMPOUND RADIATE, or RAYED, (*Radiata*), having the two sorts of flowers, *Tubular* and *Ligulate; Tubular* in the *Disk* or centre, and *Ligulate* in the *Ray* or circumference.

X. CRUCIFORM (*Cruciata*), having four petals, placed like a St. Andrew's Cross.

XI. ROSACEOUS (*Rosacea*), having five or more petals, not fleshy, orbicularly placed.

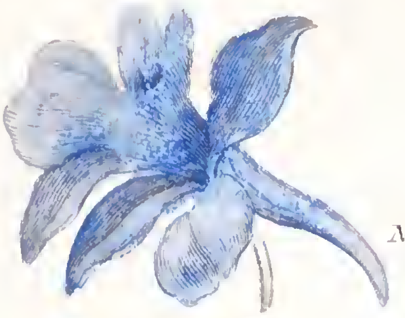
XII. LILIACEOUS (*Liliacea*), having six or more petals, fleshy, placed also in a circle.

XIII. PAPILIONACEOUS (*Papilionacea*), having four petals, of different shapes and sizes, placed so as to resemble a butterfly on the wing.

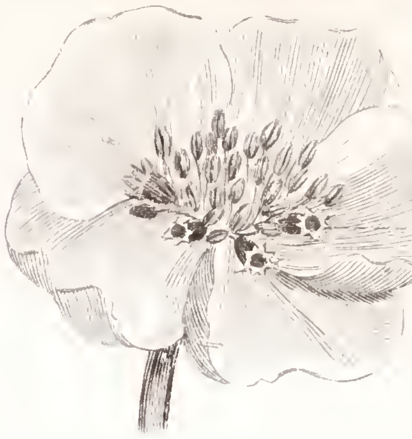
Four Petals.) For the names which these have received, vide explanation of the Botanical Terms applied to the Corolla, page 13.

The different kinds of Nectaries.

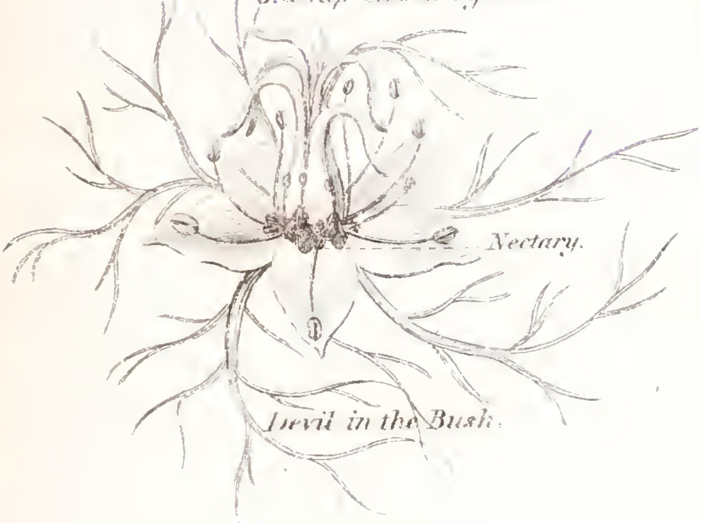
1. A Spur.



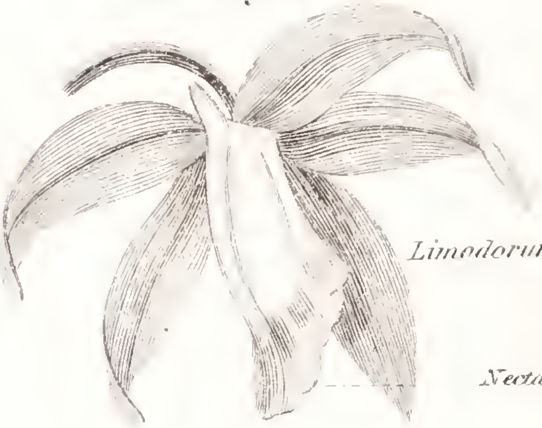
2. Small open Cups.



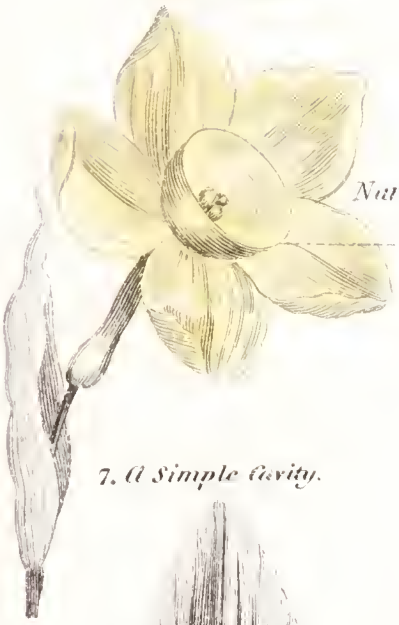
3. A Cup closed by a lid.



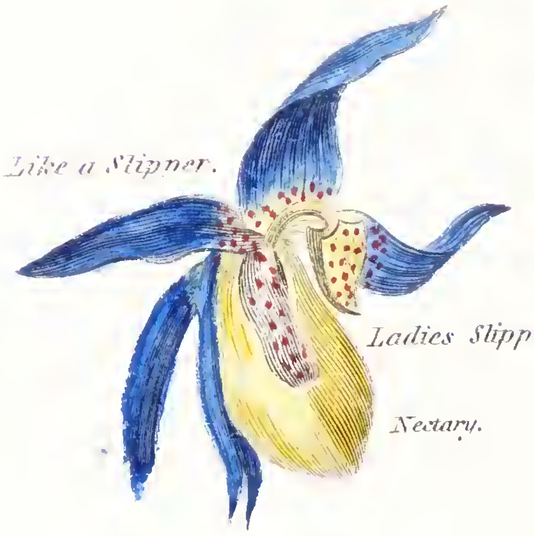
4. Like the finger of a Glove.



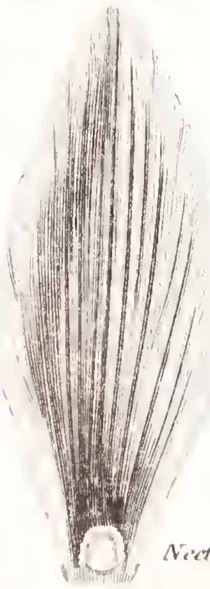
5. Like a Funnel.



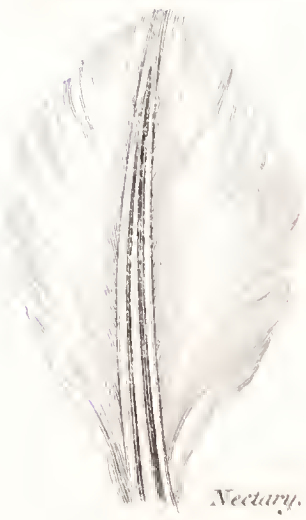
6. Like a Slipper.



7. A Simple Cavity.



8. A Naked Channel.



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THE DIFFERENT KINDS OF NECTARIES.

THE term NECTARY, like the COROLLA, is also a complex idea, like our words pigeon, dog, made up of many different individuals, indeed too numerous and diversified, to be distributed under heads, for every singular appearance in different parts of the flower, even unconnected with the corolla, for whatever is not calyx, or stamen, or pistillum, or corolla, whether it secretes honey, or not, is called by botanists, the NECTARY.

The following are amongst the most prominent examples :—

1. A SPUR, OR HORN (*Nect. corniculatum*).
2. A SMALL OPEN CUP (*Cyathus apertus*), small hollow cups, circularly ranged in the interior of the flower.
3. A CUP CLOSED BY A LID (*Cyathus clausus*), a similar arrangement of nectaries, as in the preceding, but closed with a lid.
4. LIKE THE CUT FINGER OF A GLOVE (*Nect. companulatum*), hollowed like the finger of a glove cut off but depending.
5. LIKE A FUNNEL, upright (*Nect. Infundibuliforme*).
6. LIKE A SLIPPER (*Nect. calceiforme*).
7. A SIMPLE CAVITY (*Fovea excavata*), an excavation at the base of each petal.

8. A naked channel (*Linea longitudinalis excavata*), an hollow longitudinal groove, in a petal.

9. Villous projections (*Nect. barbatum*), numerous villi placed upon the petal.

10. Filaments without anthers, imitating stamina (*Filamenta sine antheris, veluti stamina*), filiform projections like stamina, each terminated with a clasper.

11. Petal-like (*Nec. petalum mentiens*).

12. Resembling a nest of doves (*Columbulos referens*), five cornuted nectaries, the whole resembling much a nest of doves.

13. Resembling dolphins (*Figuram Delphini repræsentans*), like a dolphin elevated on a pillar or filament.

14. Like a tongue (*Veluti lingua*).

15. Resembling rays of glory (*Filamenta versicolorata in orbem posita*), projections in the form of rays of glory.

16. Giving the appearance of various animals (*Nect. formam animalium mentiens*).

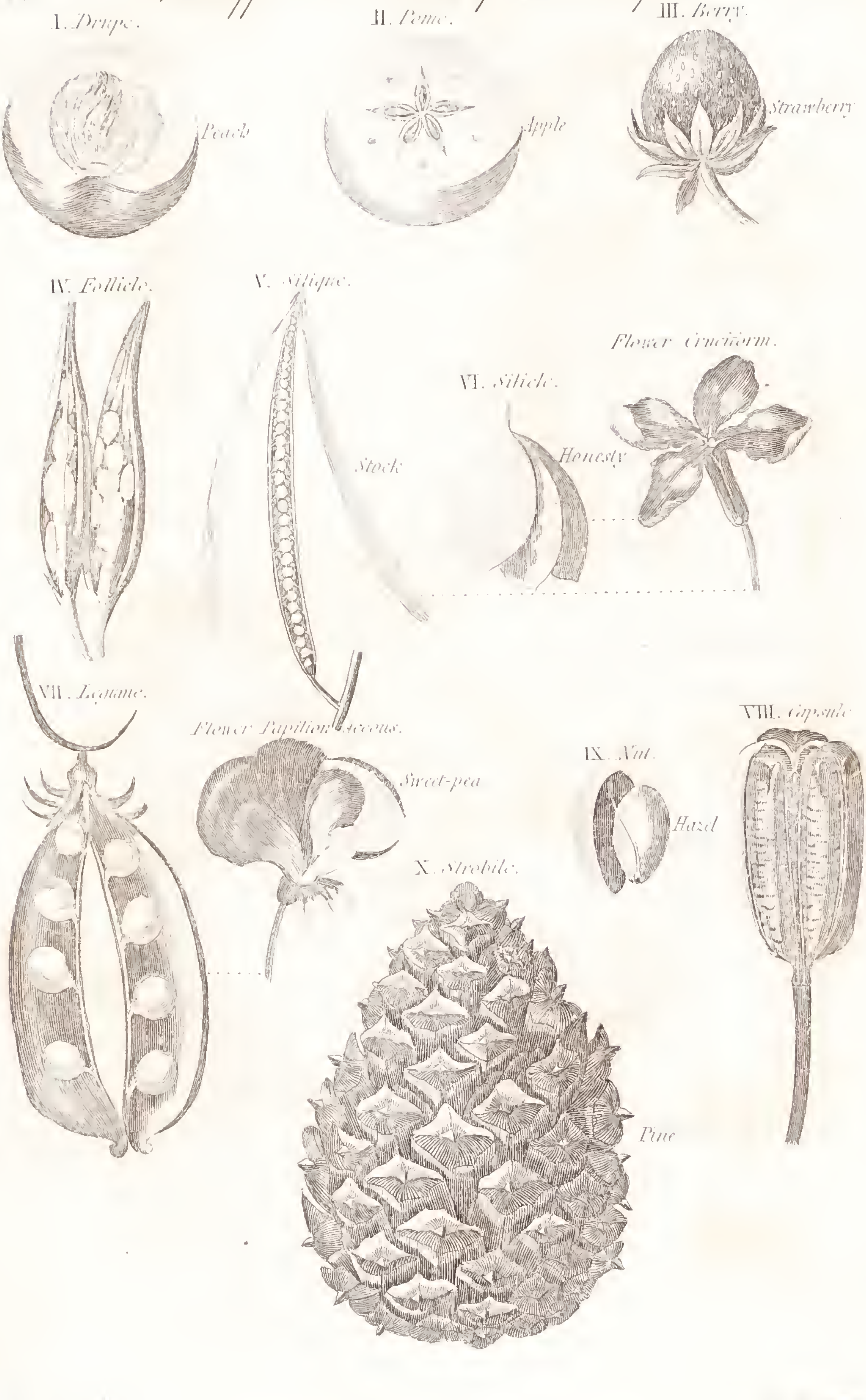
17. A naked scale (*Squama nuda*).

18. A fringed scale (*Squama fimbriata*).

19. Glands upon the stamens (*Glandulæ filamentis adspersæ*).

20. Glands at the insertion of stamens (*Glandulæ filamentis positæ.*)

The different kinds of Pericarp.


I. Drupe.
Peach
II. Pome.
Apple
III. Berry.
Strawberry
IV. Follicle.
V. Silique.
Stock
VI. Silicle.
Honesty
Flower Cruciform.
VII. Legume.
Flower Papilionaceous.
Sweet-pea
IX. Nut.
Hazel
VIII. Capsule
Lily
X. Strobile.
Pine

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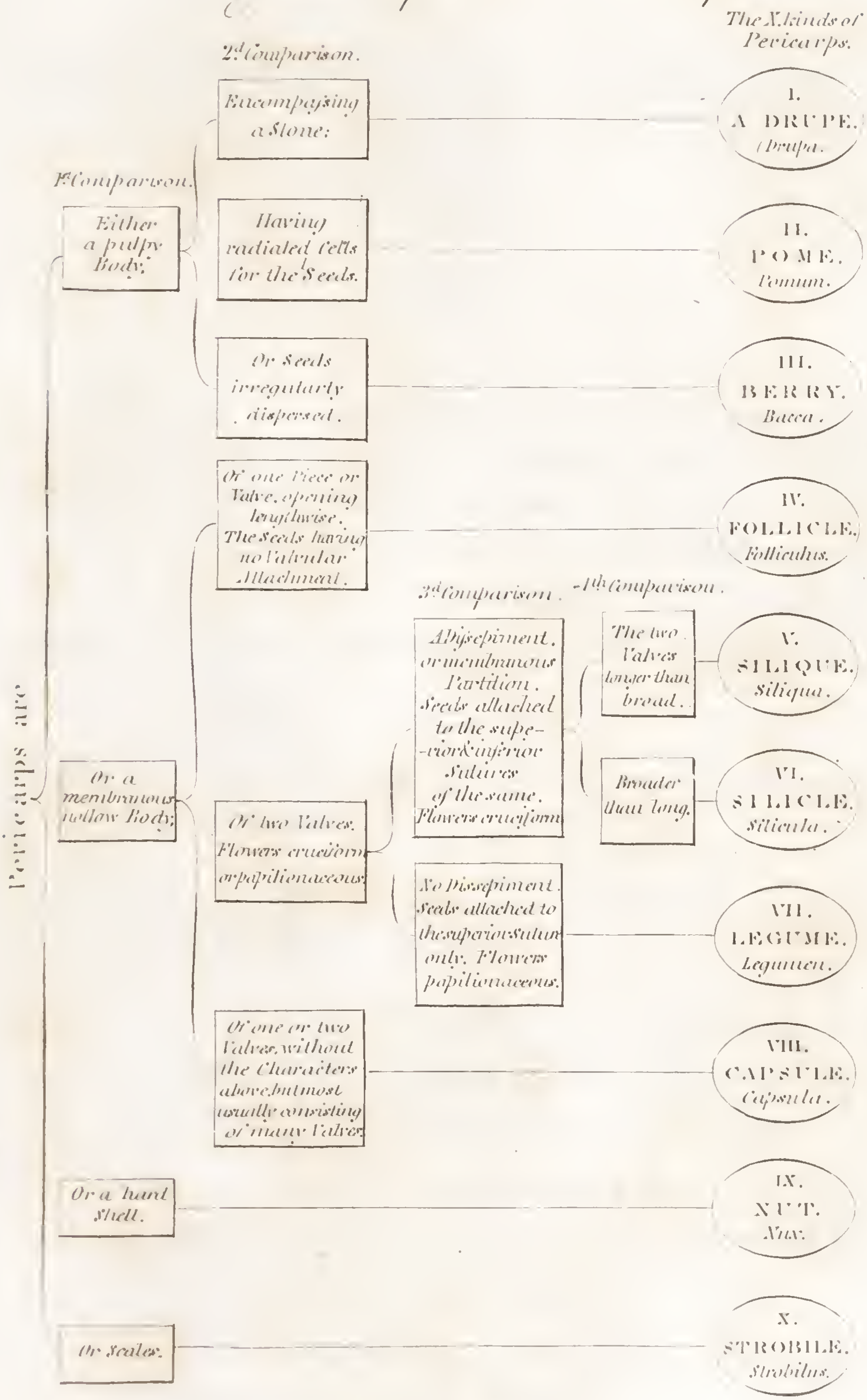
Mitan sculp.

Analysis of Pericarps.


The X. kinds of Pericarps.
Pericarps are
1st Comparison.
Either a pulpy Body;
2d Comparison.
Encompassing a Stone:
I. A DRUPE. (Drupa.
Having radiated Cells for the Seeds.
II. POME. Pomum.
Or Seeds irregularly dispersed.
III. BERRY. Bacca.
Or a membranous hollow Body;
Of one Piece or Valve, opening lengthwise. The Seeds having no Valvular Attachment.
IV. FOLLICLE. Folliculus.
Of two Valves. Flowers cruciform or papilionaceous;
3d Comparison.
A Dissepiment, or membranous Partition. Seeds attached to the superior & inferior Sutures of the same. Flowers cruciform
4th Comparison.
The two Valves longer than broad.
V. SILIQUE. Siliqua.
Broader than long.
VI. SILICLE. Silicula.
No Dissepiment. Seeds attached to the superior Suture only. Flowers papilionaceous.
VII. LEGUME. Legumen.
Of one or two Valves, without the Characters above, but most usually consisting of many Valves.
VIII. CAPSULE. Capsula.
Or a hard Shell.
IX. NUT. Nux.
Or Scales.
X. STROBILE. Strobilus.

THE DIFFERENT KINDS OF PERICARPS.

SYNTHESIS.

AFTER the sight and smell have been regaled by flowers, Nature then seems only intent upon the continuation and increase of the species. The CALYX and COROLLA wither; the STAMINA having fulfilled their office, perish, with the STIGMA and STYLE; and the GERMEN alone increases, and then becomes conspicuous, when it is called the PERICARP.

TEN different sorts of PERICARPS, or SEED-VESSELS, are enumerated by botanists.

I. DRUPE (*Drupa*) is a pulpy seed-vessel—incompassing a stone, or nut.

II. POME (*Pomum*) is a pulpy seed-vessel—not enclosing a stone, or nut—in the middle of which are radiated cells for the reception of seeds.

III. BERRY (*Bacca*) is a pulpy seed-vessel, without radiated cells in the centre—having the seeds irregularly dispersed throughout the pulp.

IV. FOLLICLE (*Folliculus*) is a membranous seed-vessel—of one valve—opening longitudinally, i. e. on the side—and having no apparent suture for fastening or attaching the seeds within it.

V. SILIQUE (*Siliqua*) is a membranous seed-vessel—of two valves, with a dissepiment intervening—seeds attached alternately to the upper and under sutures—seed-vessel longer than broad—flowers cruciform.

VI. SILICLE (*Silicula*) has the same definition as the last—except that the seed-vessel is rather broader than long.

VII. LEGUME (*Legumen*) is a membranous seed-vessel—of two valves—no dissepiment—seeds attached to the superior suture only—flowers papilionaceous.

VIII. CAPSULE (*Capsula*) is a membranous seed-vessel—varying in the number of valves—without the characters of Pericarps IV. V. VI. VII. as defined above—splits in a determinate manner into valves.

IX. NUT (*Nux*), a hard stone, or shell, enclosing a kernel—but without a pulpy covering, in which case it would be a Drupe.

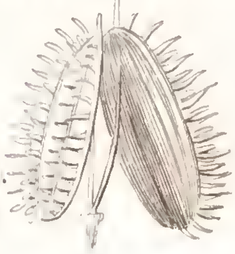
X. STROBILE (*Strobilus*) is a seed-vessel composed of ligneous scales, which embrace the seeds within their bosom.

Plate 19.

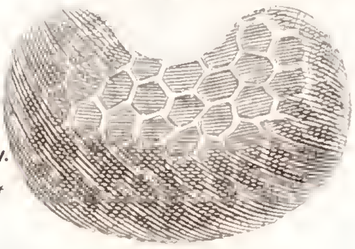
The different kinds of Seeds.

To face p.19.

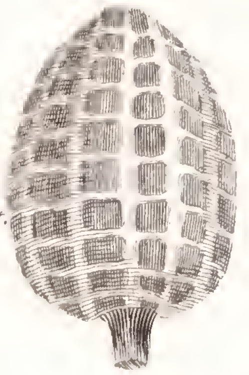
1. A double seed, each resembling a boat.



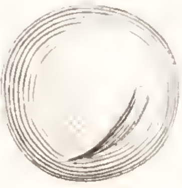
2. Kidney-shaped, with heptagon & pentagon cells.



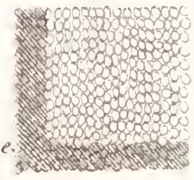
3. Ovate.



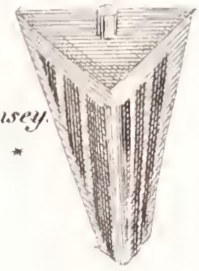
4. Globular.



5. Square.



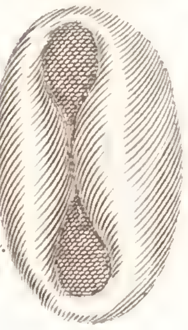
6. Triangular.



7. Cylindric.

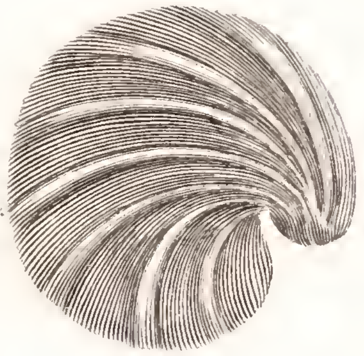
St. Johnswort.

8. Resembling a particular shell.

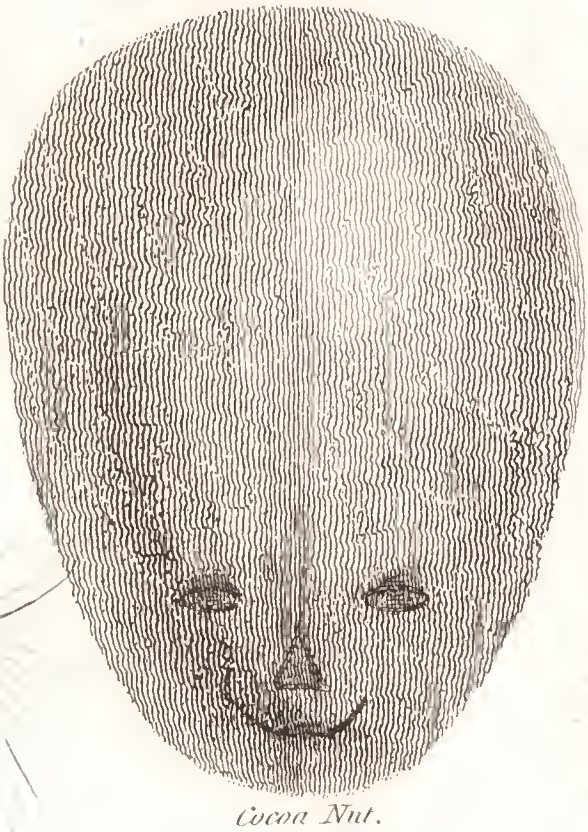


9. Ditto.

10. Ditto.



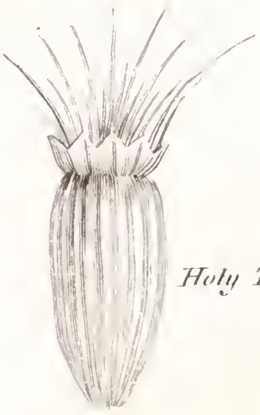
11. Resembling the Head of a Monkey.



Cocoa Nut.

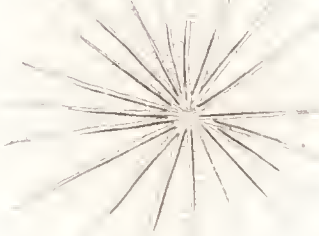
12. A single Crown.

13. A double Crown.


Holy Thistle.

14. A Shuttle Cock.

15. A Spiders Web.


Goat's-beard.

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Cooper sculp.

THE DIFFERENT KINDS OF SEEDS.

THE SEEDS present so great a diversity of appearance, that they cannot, like the CALYX, COROLLA, or PERICARP, be grouped into distinct assemblages, but must be presented to the reader individually, of which the following are some of the most striking examples.

1. A DOUBLE-SEED, EACH RESEMBLING A BOAT (*Semen duplex, naviculæ formam repræsentans*).
2. KIDNEY-SHAPED, WITH HEPTAGON AND PENTAGON CELLS (*Reniforme, cellulis pentagonis et heptagonis*).
3. OVATE (*Ovatum*), shaped like an egg.
4. GLOBULAR (*Globosum*).
5. SQUARE (*Tetragonum*), having four sides.
6. TRIANGULAR (*Triangulare*), having three sides.
7. CYLINDRIC (*Oblongum*), oblong.
8. RESEMBLING A PARTICULAR SHELL (*Figuram chonchæ mentiens*).
9. Ditto.
10. Ditto.
11. RESEMBLING THE HEAD OF A MONKEY (*Figuram cynocephali repræsentans*).
12. A SINGLE CROWN (*Corona simplex*).
13. A DOUBLE CROWN (*Corona duplex*).
14. A SHUTTLE-COCK (*Corona pennacea*).

BOTANICAL TERMS APPLICABLE TO THESE SEVERAL PARTS.

I. CALYX.

PECULIAR (*Proprius*), belonging to a single flower.

COMMON (*Communis*), common to several flowers.

BENEATH (*Inferus*), placed beneath the Germen.

ABOVE (*Superus*), above the Germen.

MONOPHYLLOUS (*Monophyllus*), consisting of one leaf.

DIPHYLLOUS (*Diphyllus*), of two leaves.

TRIPHYLLOUS (*Triphyllus*), of three leaves.

TETRAPHYLLOUS (*Tetraphyllus*), of four leaves.

PENTAPHYLLOUS (*Pentaphyllus*), of five leaves and so on to

POLYPHYLLOUS (*Polyphyllus*), composed of many leaves.

INTIRE (*Integer*), having the border, or edge of the leaf even.

TOOTHED (*Dentatus*), cut into small teeth.

PARTITE (*Partitus*), divided into large segments.

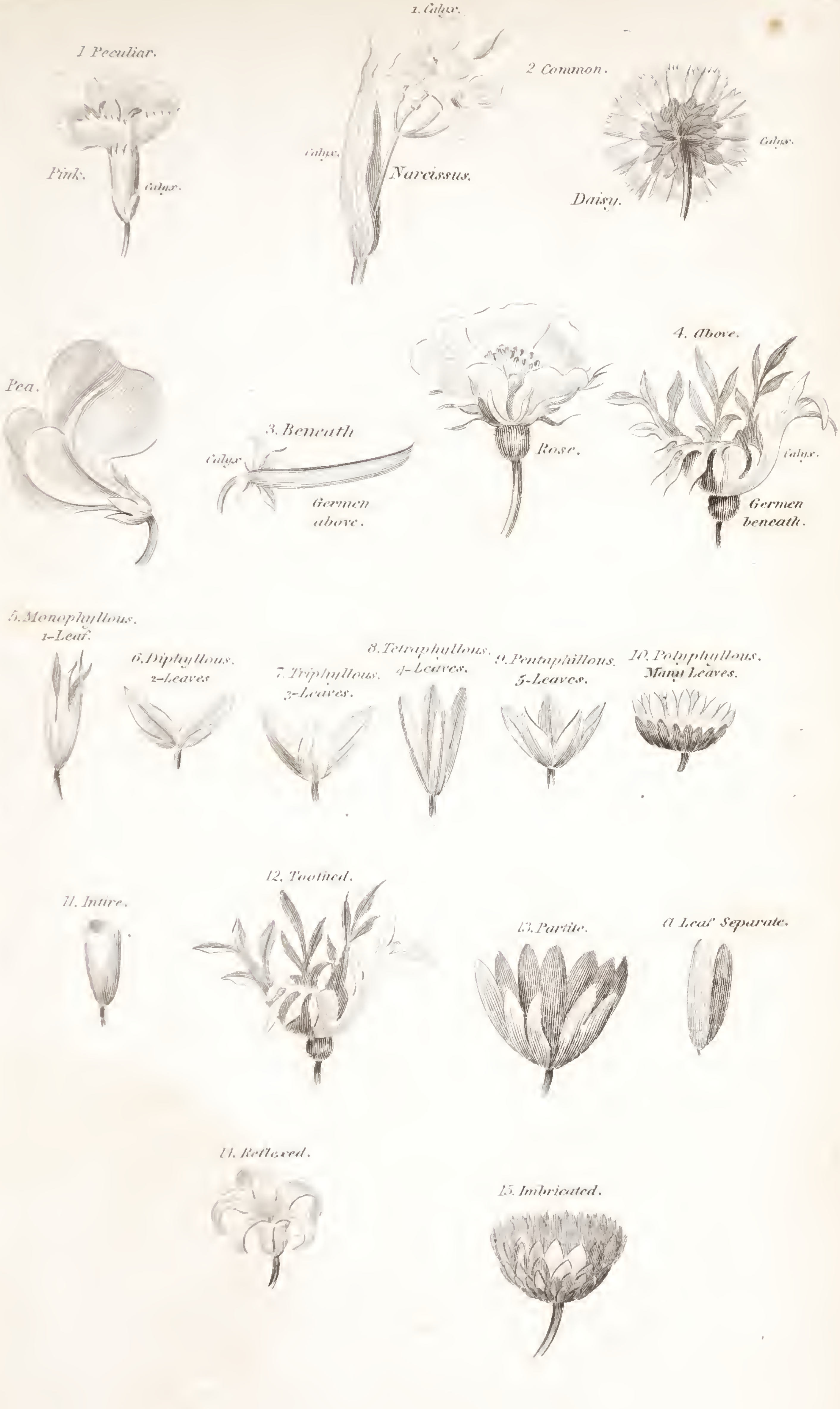
REFLEXED (*Reflexus*), bent back.

IMBRICATED (*Imbricatus*), having the leaves placed over one another like the tiles of a house.

To face p. 20.

Botanical Terms.

Plate 20.



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II. COROLLA.

Monopetalous (*Monopetala*), composed of one petal only.

Polypetalous (*Polypetala*), composed of two or more petals.

Simple (*Simplex*), not a compound flower.

Compound (*Composita*), made up of distinct florets on a common receptacle.

Rayed (*Radiata*), having tubular florets in the *disk*, or centre, and ligulate in the *ray*, or circumference.

Tubular (*Tubularis*), having florets ending in a tube.

Ligulate (*Ligulata*), having the petal linear, like a strap.

Regular (*Regularis*), with all the parts proportionate.

Irregular (*Irregularis*,) having all the parts disproportionate.

Tube (*Tubus*), the inferior narrow hollow part of a monopetalous corolla.

Claw (*Unguis*), the inferior narrow flat part of a polypetalous corolla.

Border (*Lamina*), the upper flat part of a polypetalous corolla.

Banner (*Vexillum*), the upper part of a papilionaceous flower.

Wings (*Alæ*), the side petals of ditto.

Keel (*Carina*), the under petal, shaped like a boat, of ditto.

III. PERICARP.

VALVES (*Valvulæ*), the external pieces forming the sides of the seed-vessel.

SUTURES (*Suturæ*), the edges or margins, by which the valves are connected.

COLUMN (*Columella*), a central point of union of the partitions in the seed-vessels.

PARTITIONS (*Dissepimenta*), the divisions of the seed-vessel into cells.

CELLS (*Loculamenta*), hollow places for the reception of the seeds.

ONE-SEEDED (*Monospermus*).

TWO-SEEDED (*Dispermus*), and so on.

IV. SEED.

ARIL (*Arillus*), the outer coat of the seed.

EYE (*Hilum*), an oblong scar, marking the place where the seed was affixed by an umbilical cord to the seed-vessel.

HEART (*Corculum*), the rudiment of the young plant within the seed.

PLUME (*Plumula*), the ascending part of the corcule, or infant stem.

RADICLE (*Radicula*), the descending part, or infant root.

COTYLEDONS (*Cotyledones*), the side-lobes, furnishing nourishment to the corculum.

SEMINAL LEAVES (*Folia Seminalia*), the first leaves of the plantule, serving the office of cotyledons or lobes.

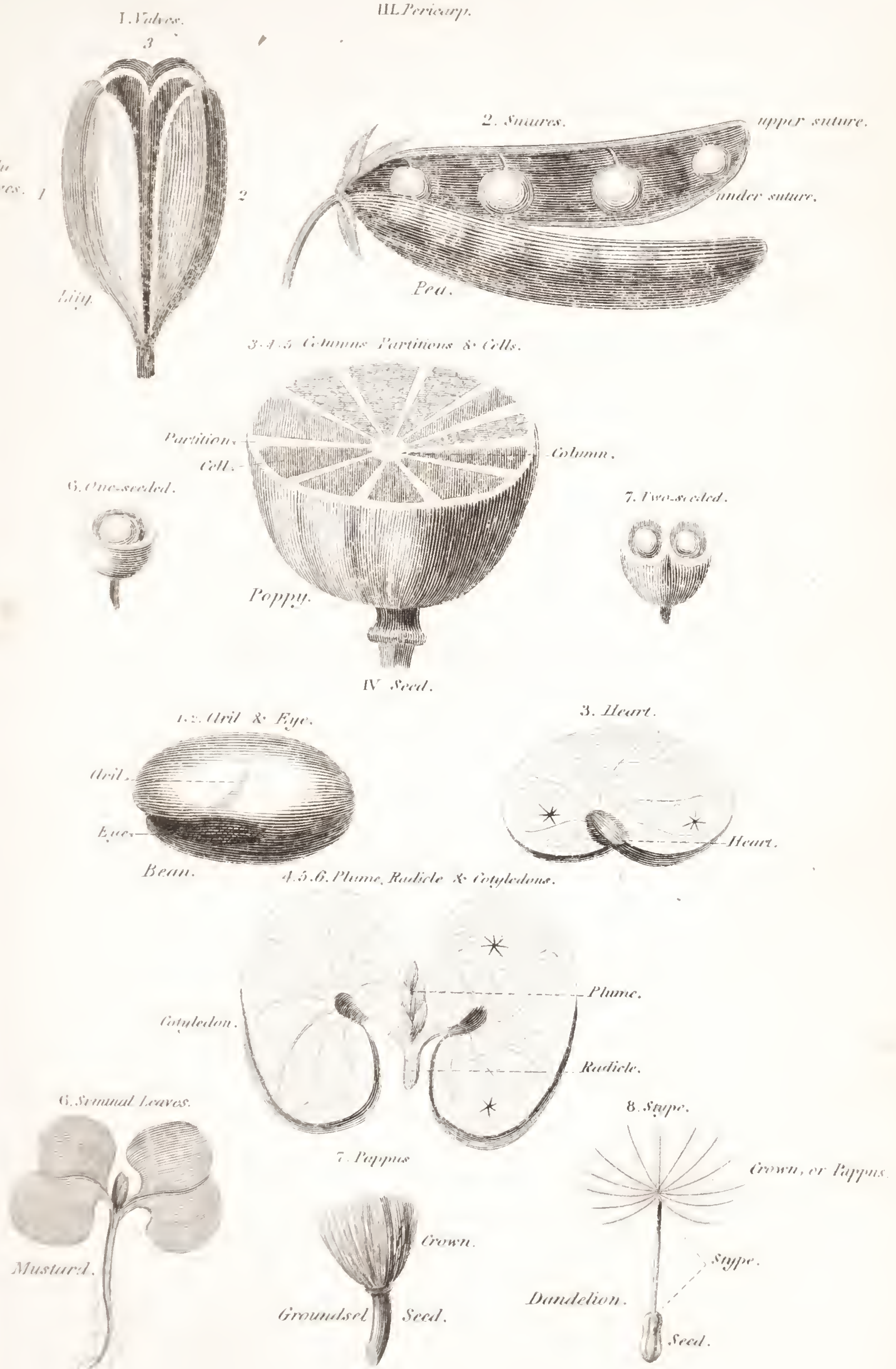
PAPPUS (*Pappus*), a feathery crown.

STIPE (*Stipes*), a thread connecting the pappus to the seed.

To face p. 22

Plate 22.

Botanical Terms.



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THE

Sexual System

OF

CAROLUS VON LINNÆUS.

“ Nisi vegetabilia in classes et ordines suas redigantur, et velut castrorum acies distribuantur, omnia fluctuari necesse est.”

CÆSALPINUS.

EXPLANATION OF THE ANALYSIS

OF THE

SEXUAL SYSTEM

OF

CAROLUS VON LINNÆUS.

THE method of ANALYSIS is called by *Logicians*, THAT OF INVENTION, for it is the mode by which knowledge is acquired, and shews the progressive steps by which we advance in the acquisition of *complex ideas.* Here we are taught to *compare,* to *reason,* to *determine,* to *adopt,* and *separate;* and, finally, in this way we arrive at certain conclusions, or *truth.* It is a mode admirably calculated for the exercise and strengthening of our reasoning powers, being the very same method also as that pursued by *Mathematicians.*

Thus then is the *systematic study of Botany* one of the best books of logic, or reasoning, in the world: or as some persons might wish to degrade it, a *manly sort* of PUZZLE, but surely as *instructive* as it is *amusing!*

A person who is in the pursuit of the CLASS and ORDER of any *unknown flower* may be said to be upon a BOTANICAL JOURNEY, and the plant being his *Directory,* if he can read the Botanical Characters impressed on it by the hand of Nature, he will certainly, following *System,* very soon arrive at his journey's end. —(*Vide our Plate of Analysis.*)

In our first start we hare two '*Comparisons*' to make.

I. Whether the Sexes are "visible," or
II. Whether the Sexes are "invisible."

That is, *whetker* the *naked eye* can *discern* the *Pistillum* and *Stamina*, or *not.*

If "the sexes are not visible," he has already reached the object of his destination, the plant whose fructification he holds in his hand, comes under CLASS XXIV. "CRYPTOGAMIA" of Linnæus.

"If on the reverse, "the sexes were visible,"—that is, the *Stamina* and *Pistilla* apparent to sight—he has now three *Comparisons* to make, which may be called the "*second stage*" of his Journey. He has carefully to examine,

I. Whether the flowers are "Bissexual,"
II. Whether the flowers are "Unisexual," or
III. Whether the flowers are "Mixed."

By 'Bissexual' plants are understood such, whose *flowers* have their *Stamina* and *Pistilla* (the *male* and *female parts* of *Plants*) inclosed within the *same corolla.*

By "Unisexual," such as produce *flowers* with the *Stamina* and *Pistilla* placed in *different corollas.*

And by "Mixed," is to be understood a *mixture* of the *two kinds of flowers*, "Bissexual," and "Unisexual."

Having made the necessary examination, if the Sexes are "mixed," he is at once arrived at his journey's end, his plant is in CLASS XXIII. POLYGAMIA.

If "Unisexual," he has one of two roads to take,

I. The two Sexes are either "on the same plant," or

II. The two Sexes are "on different plants."

That is, Stamen-bearing flowers (*male* flowers) and Pistil-bearing flowers, (*female* flowers) are in the former instance to be found on the *same* plant, produced from the *same* root,—and in the latter case, the correspondent *male* and *female* flowers, are found on *different* plants, produced on *different* roots.

His plant being as the directing post, he reads the botanical inscription, and discovers his plant to come either under the CLASS XXII. "DIŒCIA," or CLASS XXI. "MONŒCIA."

But if the flower was Bissexual, he has another course to take, and he has to see,

I. Whether the "Anthers" are "separate," or

II. Whether the "Anthers" are "united."

If he finds five "Anthers united" round the *Pistillum*, he has reached the object of his destination, namely CLASS XXII. "SYNGENESIA."

If the "Anthers" were "separate," he has to advance a "*fourth stage*," and to see,

I. Whether the "Filaments" are "separate," or

II. Whether the "Filaments" are "united with each other," or

III. Whether the "Filaments," are "united with the pistillum."

If the *Filaments arise* from *any part* of the *Pistillum*, or from a *pedicel* (column) *elevating* the *Pis-*

tillum, the plant is then of CLASS XIX. "GYNANDRIA."

If the "Filaments are united with each other," (these being joined together at bottom as a membrane), they are either,

I. All of them united, "forming one body," or
II. Divided into "two parcels," making two bodies, or,
III. Divided into "three, or more parcels," each parcel being united.

If united together, but forming "three or more parcels," the flower falls under CLASS XVIII. "POLYADELPHIA,"—if forming "two bodies," under CLASS XVII. "DIADELPHIA," and if only "one body," under CLASS XVI. "MONODELPHIA."

But if the "Filaments" were "separate," he has to examine,

I. Whether these are "proportionably long," or,
II. Whether these are of "different lengths."

Of different lengths relate only to four or six stamina.—If his flower has "six stamina," and of these he finds, "four long and two short," he has reached his destination. CLASS XV. "TETRADYNAMIA,"—if "four stamina," "two" of these "being long" and "two short," he discovers his plant to be of the CLASS XIV. "DIDYNAMIA."

If his flower falls under none of the former considerations, he has an easy task now assigned him, only to count "NUMBERS;" but if these amount to "TWENTY OR MORE STAMINA," he has also to attend to "*insertion.*"

I. Whether "INSERTED ON THE CALYX OR COROLLA," OR,
II. Whether "INSERTED ON THE RECEPTACLE."

If "INSERTED ON THE RECEPTACLE," the CLASS is XIII. "POLYANDRIA,"—and if on the calyx or corolla, CLASS XII. "ICOSANDRIA."

The other comparisons are equally easy, as—

CLASS XI.	"DODECANDRIA, TWELVE TO NINETEEN STAMINA.
CLASS X.	"DECANDRIA, TEN STAMINA."
CLASS IX.	"ENNEANDRIA, NINE STAMINA."
CLASS VIII.	"OCTANDRIA, EIGHT STAMINA."
CLASS VII.	"HEPTANDRIA, SEVEN STAMINA."
CLASS VI.	"HEXANDRIA, SIX STAMINA."
CLASS V.	"PENTANDRIA, FIVE STAMINA."
CLASS IV.	"TETRANDRIA, FOUR STAMINA."
CLASS III.	"TRIANDRIA, THREE STAMINA."
CLASS II.	"DIANDRIA, TWO STAMINA."
CLASS I.	"MONANDRIA, ONE STAMEN."

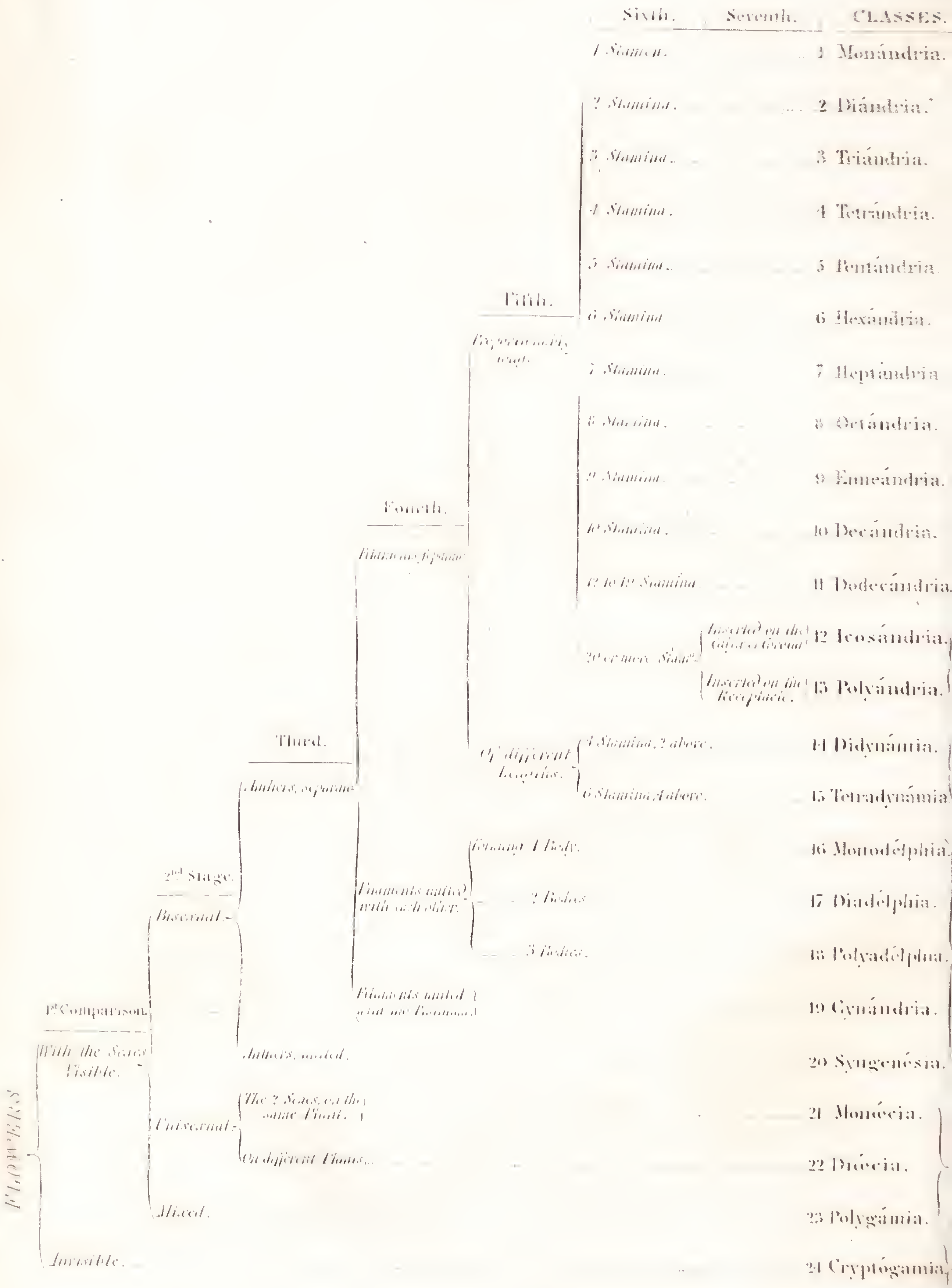
An APPENDIX has been added to this System by Linnæus including PALMS, which are now distributed into their respective classes.

TABLE OF ANALYSIS

OF THE

SEXUAL SYSTEM.

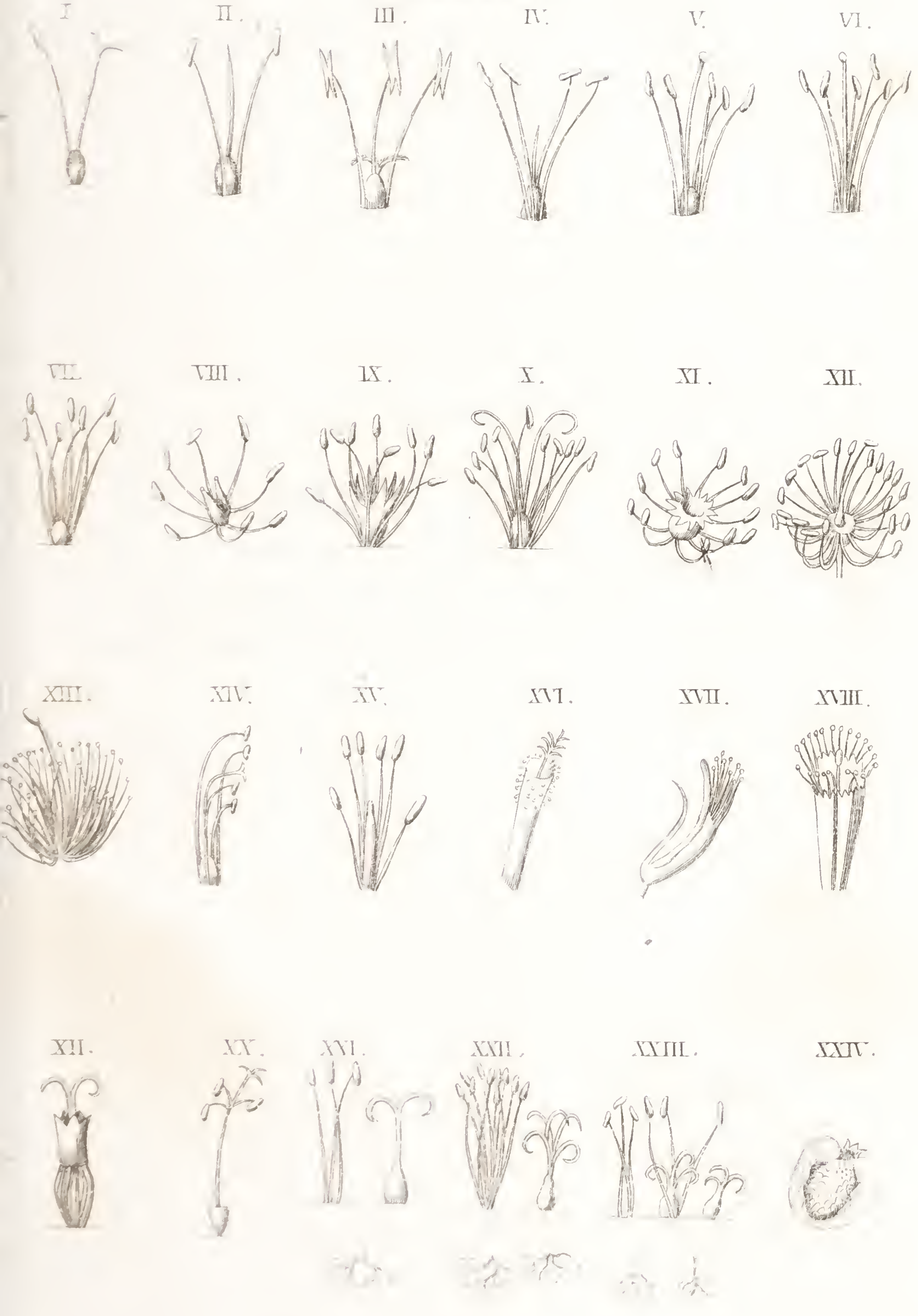
THE SEXUAL SYSTEM OF LINNÆUS.



London, Published by Dr Thornton, 1812.

The Sexual System, as found in the Works of Linnæus.

CLASSES



London Published by W. Thornton, Cornhill.

After this *Analysis*, or *Separation*, the student should take the classes in the reverse order, commencing with CLASS I. MONANDRIA, and ending with CLASS XXIV. CRYPTOGAMIA.

SYNTHESIS OF THE CLASSES

OF THE

SEXUAL SYSTEM

OF

CAROLUS VON LINNÆUS.

CLASSES.

1.	Monandria.	One Stamen.
2.	Diandria.	Two Stamens, or Stamina.
3.	Triandria.	Three Stamens.
4.	Tetrandria.	Four Stamens, of equal length.
5.	Pentandria.	Five Stamens, anthers not united.
6.	Hexandria.	Six Stamens, all of equal length.
7.	Heptandria.	Seven Stamens.
8.	Octandria.	Eight Stamens.
9.	Enneandria.	Nine Stamens.
10.	Decandria.	Ten Stamens, filaments separate.
11.	Dodecandria.	Twelve Stamens, to nineteen, inserted on the receptacle.

12.	Icosandria.	Twenty or more Stamens, inserted upon the calyx or corolla.
13.	Polyandria.	Many Stamens, inserted into the receptacle.
14.	Didynamia.	Four Stamens, two long, two short: flowers ringent.
15.	Tetradynamia.	Six Stamens, four long, two short: flowers cruciform.
16.	Monadelphia.	Filaments united at bottom, but separate at top.
17.	Diadelphia.	Filaments united in two sets: flowers papilionaceous.
18.	Polyadelphia.	Filaments united in three, or more sets.
19.	Syngenesia.	Anthers united. Five Stamens: flowers mostly compound.
20.	Gynandria.	Stamens inserted on the pistil, or on a pillar elevating the pistil.
21.	Monœcia.	Stamens and pistils in separate corollas, upon the same plant.
22.	Diœcia.	Stamens and pistils in distinct corollas, upon different plants.
23.	Polygamia.	Various Situations. Stamens only, or pistils only, along with bissexual flowers.
24.	Cryptogamia.	Stamens and pistils inconspicuous.

SYNTHESIS

OF THE

CLASSES AND ORDERS.

Number of the Classes.	CLASSES.	Orders in each Class.	ORDERS.
1.	MONANDRIA.	2.	1. Monogynia. 2. Digynia.
2.	DIANDRIA.	3.	1. Monogynia. 3. Tryginia. 2. Digynia.
3.	TRIANDRIA.	3.	1. Monogynia. 3. Tryginia. 2. Digynia.
4.	TETRANDRIA.	3.	1. Monogynia. 3. Tetragynia. 2. Digynia.
5.	PENTANDRIA.	6.	1. Monogynia. 4. Tetragynia. 2. Digynia. 5. Pentagynia. 3. Trigynia. 6. Polygynia.
6.	HEXANDRIA.	5.	1. Monogynia. 4. Tetragynia. 2. Digynia. 5. Polygynia. 3. Trigynia.
7.	HEPTANDRIA.	4.	1. Monogynia. 3. Tetragynia. 2. Digynia. 4. Heptagynia.
8.	OCTANDRIA.	4.	1. Monogynia. 3. Trigynia. 2. Digynia. 4. Tetragynia.
9.	ENNEANDRIA.	3.	1. Monogynia. 3. Hexagynia. 2. Tryginia.
10.	DECANDRIA.	5.	1. Monogynia. 4. Pentagynia. 2. Digynia. 5. Decagynia. 3. Trigynia.
11.	DODECANDRIA.	6.	1. Monogynia. 4. Pentagynia. 2. Digynia. 5. Octagynia. 3. Trigynia. 6. Dodecagynia.
12.	ICOSANDRIA.	5.	1. Monogynia. 4. Pentagynia. 2. Digynia. 5. Polygynia. 3. Trigynia.
13.	POLYANDRIA.	7.	1. Monogynia. 5. Pentagynia. 2. Digynia. 6. Hexagynia. 3. Trigynia. 7. Polygynia. 4. Tetragynia.

Number of the Classes.	CLASSES.	Orders in each Class.	ORDERS.
14.	DIDYNAMIA.	2.	1. Gymnospermia. 2. Angiospermia.
15.	TETRADYNAMIA.	2.	1. Siliculosa. 2. Siliquosa.
16.	MONADELPHIA.	5.	1. Pentandria. 2. Decandria. 3. Endecandria. 4. Dodecandria. 5. Polyandria.
17.	DIADELPHIA.	4.	1. Pentandria. 2. Hexandria. 3. Octandria. 4. Decandria.
18.	POLYADELPHIA.	4.	1. Pentandria. 2. Dodecandria. 3. Icosandria. 4. Polyandria.
19.	SYNGENESIA.	6.	1. Polygamia Æqualis. 2. Polygamia Superflua. 3. Polygamia Frustranea. 4. Polygamia Necessaria. 5. Polygamia Segregata. 6. Monogamia
20.	GYNANDRIA.	8.	1. Diandria. 2. Triandria. 3. Tetrandria. 4. Pentandria. 5. Hexandria. 6. Decandria. 7. Dodecandria. 8. Polyandria.
21.	MONŒCIA.	11.	1. Monandria. 2. Diandria. 3. Triandria. 4. Tetrandria. 5. Pentandria. 6. Hexandria. 7. Heptandria. 8. Polyandria. 9. Monadelphia. 10. Syngenesia. 11. Gynandria.
22.	DIŒCIA.	14.	1. Monandria. 2. Diandria. 3. Triandria. 4. Tetrandria. 5. Pentandria. 6. Hexandria. 7. Octandria. 8. Enneandria. 9. Decandria. 10. Dodecandria. 11. Polyandria. 12. Monadelphia. 13. Syngenesia. 14. Gynandria.
23.	POLYGAMIA.	3.	1. Monœcia. 2. Diœcia. 3. Triœcia.
24.	CRYPTOGAMIA.	4.	1. Filices. 2. Musci. 3. Algæ. 4. Fungi.

SYNTHESIS OF THE SEXUAL SYSTEM

OF

CAROLUS VON LINNÆUS;

With the Classes and Orders, explained and illustrated by Examples.

CLASS I. MONANDRIA (*One Stamen*), contains two ORDERS.

ORDERS.				EXAMPLES.
1 *Monogynia*	having	one	Pistillum.	SALICORNIA, (*Jointed Glass-wort.*) CANNA, F.* *Indian Flowering Reed.*)
2 *Digynia*	. . . .	two	Pistilla.	CALLITRICHE, (*Star-headed Water Chickweed.*) BLITUM, (*Strawberry Spinage.*)

CLASS II. DIANDRIA (*Two Stamina*, contains three ORDERS.

1 *Monogynia*	having	one	Pistillum.	LIGUSTRUM, (*Privet.*) VERONICA, (*Speedwell.*)
2 *Digynia*	. . . .	two	Pistilla.	ANTHOXANTHUM, (*Sweet-scented Vernal-Grass.*)
3 *Trigynia*	. . . .	three	Pistilla.	PIPER, F. (*Pepper.*)

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* F. Means foreign, those not marked so are the natural produce of England.

CLASS III. TRIANDRIA (*Three Stamina*), contains three ORDERS.

Orders.				Examples.
1 *Monogynia*	having	one	Pistillum.	Valeriana, (*Valerian.*) Crocus, (*Saffron.*)—Iris.
2 *Digynia*	. . . .	two	Pistilla.	Gramina Pleraque, (*most of the Grasses.*)
3 *Trigynia*	. . . .	three	Pistilla.	Montia, (*Water Chickweed.*)

CLASS IV. TETRANDRIA (*Four equal Stamina*), contains three ORDERS.

1 *Monogynia*	having	one	Pistillum.	Dipsacus,(*Teasel.*)Scabiosa,(*Scabious*).Plantago(*Plantain.*)
2 *Digynia*	. . . .	two	Pistilla.	Aphanes, (*Parsley-piert.*)
3 *Tetragynia*	. . .	four	Pistilla.	Potamogeton, (*Pondweed.*)

CLASS V. PENTANDRIA (*Five Stamina*), contains six ORDERS.

1 *Monogynia*	having	one	Pistillum.	Primula, (*Primrose.*) Convolvulus.—Lonicera, (*Honeysuckle.*)
2 *Digynia*	. . . .	two	Pistilla.	Gentiana Centaurium, (*Centaury.*) Conium, (*Hemlock.*) Ulmus, (*Elm.*)
3 *Trigynia*	. . . .	three	Pistilla.	Viburnum, (*Wayfaring Tree.*) Sambucus, (*Elder.*)
4 *Tetragynia*	. . .	four	Pistilla.	Parnassia, (*Grass of Parnassus.*)

Orders.				Examples.
5 *Pentagynia*	. . .	five	Pistilla.	Statice, (*Thrift.*) Linum, (*Flax.*) Drosera, (*Sundew.*)
6 *Polygynia*	. . .	many	Pistilla.	Myosurus, (*Mouse-tail.*)

CLASS VI. HEXANDRIA (*Six equal Stamina*), contains five ORDERS.

1 *Monogynia*	having	one	Pistillum.	Hyacinthus, (*Hyacinth.*) Convallaria, (*Lily of the Valley.*) Narcissus, (*Daffodil.*)
2 *Digynia*	. . . .	two	Pistilla.	Oryza, F. (*Rice.*)
3 *Trigynia*	. . . .	three	Pistilla.	Rumex, (*Dock.*) Colchicum, (*Meadow Saffron.*)
4 *Tetragynia*	. . .	four	Pistilla.	Petiveria, F. (*Guinea-Hen weed.*)
5 *Polygynia*	. . .	many	Pistilla.	Alisma, (*Water Plantain.*)

CLASS VII. HEPTANDRIA (*Seven Stamina*), contains four ORDERS.

1 *Monogynia*	having	one	Pistillum.	Trientalis, (*Chickweed Winter Green.*) Æsculus, F. (*Horse Chesnut.*)
2 *Digynia*	. . . .	two	Pistilla.	Limeum, F.

Orders.				Examples.
3 *Trigynia*		three	Pistilla.	Sarurus, F. (*Lizard's-tail.*)
4 *Heptagynia* . . .		seven	Pistilla.	Septas, F.

CLASS VIII. OCTANDRIA (*Eight Stamina*), contains four ORDERS.

1 *Monogynia*	having	one	Pistillum.	Epilobium, (*Willow Herb*). Erica, (*Heath.*) Daphne, (*Mezerion.*)
2 *Digynia*		two	Pistilla.	Galenia, F.—Weinmannia, F. (*Mountain Chickweed.*)
3 *Trigynia*		three	Pistilla.	Polygonum, (*Bistort.*) Persicaria, (*Knot Grass.*)
4 *Tetragynia* . . .		four	Pistilla.	Paris, (*Herb Paris.*) Adoxa Moschatellina, (*Tuberous Moschatel.*)

CLASS IX. ENNEANDRIA (*Nine Stamina*), contains three ORDERS.

1 *Monogynia*	having	one	Pistillum.	Laurus, F. (*Laurel.*)
2 *Trigynia*		three	Pistilla.	Rheum, F. (*Rhubarb.*)
3 *Hexagynia* . . .		six	Pistilla.	Butomus, (*Flowering Rush.*)

CLASS X. DECANDRIA (*Ten Stamina*), contains five ORDERS.

1 *Monogynia*	having	one	Pistillum.	Arbutus, (*Strawberry Tree.*) Ruta, F. (*Rue.*) Pyrola, (*Winter Green.*)

Orders.				Examples.
2 *Digynia*	. . . .	two	Pistilla.	Saxifraga, (*Saxifrage.*) Dianthus, (*Pink.*) Saponaria, (*Soap-wort.*)
3 *Trigynia*	. . . .	three	Pistilla.	Cucubalus, (*Spatling Poppy.*) Stellaria, (*Stich-wort.*)
4 *Pentagynia*	. . .	five	Pistilla.	Sedum, (*Stonecrop.*) Oxalis, (*Wood-sorrel.*) Agrostemma, (*Cockle.*) Lychnis, (*Meadow Pink.*)
5 *Decagynia*	. . .	ten	Pistilla.	Basella, F. (*American Nightshade.*)

CLASS XI. DODECANDRIA (*Twelve to Nineteen Stamina*), contains six ORDERS.

1 *Monogynia*	having	one	Pistillum.	Asarum, (*Asarabacca.*) Lythrum, (*Purple-spiked Loosestrife.*)
2 *Digynia*	. . . .	two	Pistilla.	Agrimonia, (*Agrimony.*) Heliocarpus, F.
3 *Trigynia*	. . . .	three	Pistilla.	Reseda, (*Dyer's-weed.*) Euphorbia, (*Spurge.*)
4 *Pentagynia*	. . .	five	Pistilla.	Glinus, F.
5 *Dodecagynia*	. . .	twelve	Pistilla.	Sempervivum, (*Houseleek.*)
6 *Polygynia*	. . .	many	Pistilla.	Alisma, F.

CLASS XII. ICOSANDRIA (*Twenty or more Stamina on the Calyx or Corolla*), contains 5 ORDERS.

1 *Monogynia*	having	one	Pistillum.	Prunus, (*Black Thorn.*) Myrtus, F. (*Myrtle.*) Amygdalus, F. (*Almond.*)

Orders.				Examples,
2 *Digynia*		two	Pistilla.	Cratægus, (*Hawthorn.*)
3 *Trigynia*		three	Pistilla.	Sorbus, (*Mountain Ash.*)
4 *Pentagynia* . . .		five	Pistilla.	Mespilus, (*Medlar.*) Spiræa Ulmaria, (*Meadow-sweet.*) S. Filipendula, (*Drop-wort.*)
5 *Polygynia* . . .		many	Pistilla.	Rosa, (*Rose.*) Rubus, (*Bramble.*) Tormentilla, (*Tormentil.*) Fragaria, (*Strawberry.*)

CLASS XIII. POLYANDRIA (*Twenty or more Stamina on the Receptacle*), contains seven ORDERS.

1 *Monogynia*	having	one	Pistillum.	Papaver, (*Poppy.*) Chelidonium, (*Celandine.*) Nymphea, (*Water Lily.*)
2 *Digynia*		two	Pistilla.	Fothergilla, F.—Calligonum. F.—Peonia, F.—(*Piony.*)
3 *Trigynia*		three	Pistilla.	Delphinium, (*Larkspur.*) Aconitum, (*Monk's hood.*)
4 *Tetragynia* . . .		four	Pistilla.	Cimicifuga, F.—Tetracera, F.—Caryocar, F.
5 *Pentagynia* . . .		five	Pistilla.	Aquilegia, (*Columbine.*) Reaumuria, F.—Nigella, F.—(*Fennel Flower.*)
6 *Hexagynia* . . .		six	Pistilla.	Stratiotes, (*Fresh-water Soldier.*)

Orders.	Examples.
7 *Polygynia* . . . many Pistilla.	Adonis (*Pheasant's-Eye.*) Ranunculus, (*Crowfoot.*) Helleborus, (*Hellebore.*)

CLASS XIV. DIDYNAMIA (*Four long Stamens, 2 short*), contains two ORDERS.

1 *Gymnospermia*, Seeds naked in the bottom of the Calyx.	Glechoma, (*Ground Ivy.*) Lamium, (*Dead Nettle.*) Melissa, (*Baum.*)
2 *Angiospermia*, Seeds contained in a Pericarp.	Antirrhinum, (*Snapdragon.*) Digitalis, (*Foxglove.*) Scrophularia, (*Water-Betony.*)

CLASS XV. TETRADYNAMIA (*Four long Stamens, 2 short*), contains two ORDERS.

Orders.	Examples.
1 *Siliculosa*, Seeds in a small short, or round pod.	Draba, (*Whitlow-Grass.*) Hesperis, (*Honesty.*) Thlaspi Bursa Pastoris, (*Shepherd's-Purse.*)
2 *Siliquosa*, Seeds in a long slender pod.	Cheiranthus, (*Wall Flower.*) Brassica, (*Cabbage.*) Sinapis, (*Mustard.*)

CLASS XVI. MONADELPHIA (*Filaments united at bottom into one Body*), contains five ORDERS.

Orders.				Examples.
1 *Pentandria*	having	five	Stamina.	Hermannia, F.—Waltheria, F.—Melochia, F.
2 *Decandria*	. . .	ten	Stamina.	Geranium, (*Crane's-bill.*)
3 *Endecandria*	. . .	eleven	Stamina.	Brownea, F.
4 *Dodecandria*	. . .	twelve	Stamina.	Pentapetes, F.
5 *Polyandria*	. . .	many	Stamina.	Malva, (*Mallow.*)

CLASS XVII. DIADELPHIA (*Ditto united at bottom into two Bodies*), contains four ORDERS.

1 *Pentandria*	having	five	Stamina.	Monnieria, F.
2 *Hexandria*	. . .	six	Stamina.	Fumaria, (*Fumitory.*)
3 *Octandria*	. . .	eight	Stamina.	Polygala, (*Milk-wort.*)
4 *Decandria*	. . .	ten	Stamina.	Pisum, (*Pea.*) Ulex, (*Furze.*) Trifolium, (*Trefoil.*)

CLASS XVIII. POLYADELPHIA (*Ditto united at bottom into 3 or more Bodies*), contains 4 ORDERS.

1 *Pentandria*	having	five	Stamina.	Theobroma, F.

Orders.		Examples.
2 *Dodecandria* . . .	twelve Stamina.	Monsonia, F.
3 *Icosandria* . . .	twenty Stamina.	Citrus, F. (*Orange.*)
4 *Polyandria* . . .	many Stamina.	Hypericum, (*St. John's Wort.*)

CLASS XIX. SYNGENESIA (*Five united Anthers*), contains six ORDERS.

1 *Polygamia æqualis*, when all the flosculi, or florets, are bissexual. Leontodon, (*Dandelion.*) Sonchus, (*Sow Thistle.*) Hieracium, (*Hawkweed.*) Carduus, (*Common Thistle.*)

2 *Polygamia superflua*, when the florets in the centre are bissexual, and those in the circumference female. Anthemis, (*Mayweed.*) Bellis, (*Daisy.*) Senecio, (*Groundsel.*) Chrysanthemum, (*Ox-eye Daisy.*) Tussilago, (*Colt'sfoot.*) Inula, (*Elecampane.*)

3 *Polygamia frustranea*, when the florets in the centre are bissexual, and those in the circumference barren, Centaurea, (*Blue Bottle Knapweed.*) Helianthus, F. (*Sunflower.*) Rudbeckia, F.

Orders. Examples.

4 *Polygamia necessaria*, when the bissexual florets in the centre produce no seed, but the pistil florets in the circumference produce perfect seed. Calendula, F. (*Marigold.*) Silphium, F.—Gnaphalium, (*Cudweed.*) Arctotis, F.

5 *Polygamia segregata*, many partial or proper calixes within the common calyx, separating the flosculi or florets. Echinops, F.—(*Globe Thistle.*) Gundelia, F.—Speranthus, F.

6 *Polygamia monogamia*, contains simple flowers (i. e. not compound,) which have their Anthers united. Viola, (*Violet.*) Impatiens, (*Touch-me-not. Balsam.* F.) Lobelia, (*Cardinal Flower*, F.)

CLASS XX. GYNANDRIA (*Stamens growing out of the Pistil, or an elongated Receptacle*), contains eight ORDERS.

1 *Diandria* having two Stamina. Orchis. Cypripedium, (*Ladies'-Slipper.*)
2 *Triandria* . . . . three Stamina Sisyrinchium, F.—Ferraria, F.
3 *Tetrandria* . . . four Stamina. Nepenthes, F.

Orders.				Examples.
4 *Pentandria*	. . .	five	Stamina.	Passiflora, F. (*Passion Flower.*) Gluta, F.
5 *Hexandria*	. . .	six	Stamina.	Aristolochi, F.—Pistia, F.
6 *Decandria*	. . .	ten	Stamina.	Kleinhovia, F.—Helicteres, F. (*Screw Tree.*)
7 *Dodecandria*	. . .	twelve	Stamina.	Cytinus, F.
8 *Polyandria*	. . .	many	Stamina.	Arum, (*Cuckow Pint.*)

CLASS XXI. MONŒCIA contains eleven ORDERS.

1 *Monandria*	having	one	Stamen.	Chara. Zannichellia, (*Horned Pondweed.*) Elaterium, F. (*Wild Cucumber.*)
2 *Diandria*	. . . .	two	Stamina.	Lemna, (*Duckmeat.*) Anguria, F.
3 *Triandria*	. . . .	three	Stamina.	Sparganium, (*Burr-Reed.*) Typha, (*Cats-tail.*) Carex.
4 *Tetrandria*	. . .	four	Stamina.	Urtica, (*Nettle.*) Morus, F. (*Mulberry.*) Buxus, (*Box.*) Betula, (*Birch.*)
5 *Pentandria*	. . .	five	Stamina.	Xanthium, (*Lesser Burdock.*) Amaranthus, F. (*Amaranth.*)
6 *Hexandria*	. . .	six	Stamina.	Zizania, F.—Pharus, F.
7 *Heptandria*	. . .	seven	Stamina.	Guettarda.

Orders.	Examples.
8 *Polyandria* more than seven Stamina.	Fagus, (*Beech.*) Sagittaria, (*Arrow Head.*) Corylus, (*Hazel.*) Quercus, (*Oak.*)
9 *Monadelphia* Filaments united in one body.	Pinus, (*Fir.*) Hura, F. (*Sand box Tree.*) Thuya, F. (*Arbor Vitæ.*) Cupressus, F. (*Cypress.*) Ricinus, F. (*Palma Christi.*)
10 *Syngenesia* Anthers united.	Cucumis, F. (*Cucumber.*) Trichosanthes, F. (*Serpent Cucumber.* Cucurbita, F. (*Gourd.*) Momordica, (*Balsam Apple.*)
11 *Gynandria* Stamina growing out of the Pistillum.	Andrachne, (*Bastard Orpine.*) Agneja, F.

CLASS XXII. DIŒCIA contains fourteen ORDERS.

1 *Monandria*	having	one	Stamen.	Najas, F.
2 *Diandria*	. . .	two	Stamina.	Salix, (*Willow.*) Vallisneria, F.
3 *Triandria*	. . .	three	Stamina.	Empetrum, (*Crow Berries.*) Osyris, F. (*Poet's Cassia.*)
4 *Tetrandria*	. . .	four	Stamina.	Hippophae, (*Sea Buckthorn.*) Viscum, (*Misletoe.*) Myrica (*Gale.*)

	ORDERS.		EXAMPLES.
5	*Pentandria* . . .	five Stamina.	Cannabis, F. (*Hemp.*) Humulus, (*Hop.*) Spinachia, F. (*Spinach.*) Pistachia, F (*Pistachia Nut.*)
6	*Hexandria* . . .	six Stamina.	Tamus, (*Black Bryony.*) Smilax, F. (*Rough Bindwood.*) Dioscorea, F.
7	*Octandria* . . .	eight Stamina.	Populus, (*Poplar.*) Rhodiola, (*Rose Root.*)
8	*Enneandria* . . .	nine Stamina.	Merecurialis, (*Mercury.*) Hydrocharis, (*Frogbit.*)
9	*Decandria* . . .	ten Stamina.	Carica, F. (*Papaw.*) Schinus, (*Indian Mastich.*)
10	*Dodecandria* . .	twelve Stamina.	Menispermum, F. (*Moon Seed.*) Datisca, F. (*Bastard Hemp.*)
11	*Monadelphia*	Filaments united.	Juniperus, (*Juniper.*) Taxus, (*Yew.*) Ephedra, F. (*Shrubby Horsetail.*)
12	*Polyadelphia* . .	many Stamina.	Cliffortia, F.
13	*Syngenesia*	Anthers united.	Ruscus, (*Butcher's Broom.*
14	*Gynandria*	Stamina growing out of the Pistillum.	Clutia.

CLASS XXIII. POLYGAMIA contains three ORDERS.

Orders.	Examples.
1 *Monœcia* Bissexual, and male or female flowers on the same plant.	Valantia, (*Cross-wort*) Acer, (*Maple.*) Parietaria, (*Pellitory of the Wall.*) Atriplex, (*Orach.*)
2 *Diœcia* Bissexual, and male or female flowers on separate plants.	Fraxinus, (*Ash.*) Diospyrus, F. (*Indian Date Plumb.*) Pisonia, F. (*Fingrigo.*) Gleditsia, F. (*Three-thorned Acacia.*)
3 *Triœcia* Bissexual, male and female flowers, growing separately on three distinct plants of the same species.	Ceratonia, F. (*Carob Tree.*) Ficus, F. (*Fig Tree.*)

CLASS XXIV. CRYPTOGAMIA contains four ORDERS.

1 *Filices* comprehending the Filices, (*Ferns*) Ophioglossum, (*Adder's Tongue.*) Equisetum, (*Horse-tail.*) Pilularia, (*Pepper Grass, &c.*)

2 *Musci* comprehending the Musci, (*Mosses of different kinds.*)

3 *Algæ* including the Fucus, (*Sea Weed.*) Jungermannia, &c.

4 *Fungi* containing the Agaricus, (*Mushroom.*) Lycoperdon, (*Puff Ball.*) and other Plants of that Tribe.

5 *Hepaticæ*, possessing the Liverworts.

OBSERVATIONS ON THE CLASSES AND ORDERS.

The immortal SEXUAL SYSTEM of Linnæus, whose transcendent merits soon made it triumphant over every other system, is founded upon the beautiful doctrine of the SEXES OF PLANTS. According to this system all known plants are distributed into different CLASSES, ORDERS, GENERA, and SPECIES. The CLASSES are twenty-four, and are derived from the consideration of 1. The NUMBER. 2. The NUMBER and ORIGIN. 3. The NUMBER and PROPORTION. 4. The UNION. 5. The SEPARATION, and 6thly, The Concealment of the Stamina.

1. Classes *derived from the consideration of the Number of Stamina.*

The names of the first *eleven* classes are derived from the Greek words ανηρ, ANER, *a male,* ανδρος, ANDROS, the genitive case, and some Greek word prefixed implying *number,* as

Class I. Monandria, from μονος, MONOS, *one,* and ανηρ, ANER, *a male.*

Class II. Diandria, from δις, DIS, *two,* and ανηρ, ANER, *a male.*

Class III. Triandria, from τρεις, TREIS, *three,* and ανηρ, ANER, *a male.*

Class IV. Tetrandria, from τεσσαρες, TESSARES, *four*, and ανηρ, ANER, *a male.*

Class V. Pentandria, from πεντε, PENTE, *five*, and ανηρ, ANER, *a male.*

Class VI. Hexandria, from εξ, EX, *six*, and ανηρ, ANER, *a male.*

Class VII. Heptandria, from ἑπτα, HEPTA, *seven*, and ανηρ, ANER, *a male.*

Class VIII. Octandria, from οκτω, OCTO, *eight*, and ανηρ, ANER, *a male.*

Class IX. Enneandria, from εννεα, ENNEA, *nine*, and ανηρ, ANER, *a male.*

Class X. Decandria, from δεκα, DEKA, *ten*, and ανηρ, ANER, *a male.*

Class XI. Dodecandria, from δωδεκα, DODEKA, *twelve*, and ανηρ, ANER, *a male.*

Here we may remark, that Class III. Triandria, contains the natural family of the Grasses, (*Gramina*) plants possessing a simple leaf, a jointed stem, and a husky calyx, terminating usually with an arista, awn, or beard, and producing one seed.

The great solicitude of *Nature* for the preservation of grasses is evident from this; that the more the leaves are consumed, the more the roots increase. The great *Author* of *nature* designed that the delightful verdure of these plants should cover the surface of the earth, and that they should afford nourishment to an almost infinite number of animals. And what increases our astonishment most, is, that although the GRASSES constitute the principal food of herbivorous animals, yet, whilst they are left at liberty in the pasture, they leave untouched the culm which support the flowers; that the seeds may ripen and sow themselves. And on lofty mountains, where the summer heats are hardly sufficient to ripen the seeds, the most common Grasses are, the FESTUCA *ovina*, the POA *alpina*, and the AIRA *cæspitosa*, all which are viviparous, and consequently propagate themselves by bulbs without seeds.

In general, the leaves furnish pasturage for cattle; the smaller seeds are food for birds, and the larger for men. But some are preferred to others; as the FESTUCA for sheep; the POA for Cows; the PHALARIS for Canary-birds and Linnets; the AVENA for Horses; the SECALE HORDEUM and TRITICUM for Man.

Variety of Insects too derive their nourishment from grasses; as the *Papilio mæra*, *Pap. Ægeria*, *Pap. Galatea*, *Pap. Jurtina*, *Pap. Cinxia*, *Phalæna quercifolia*, *Ph. Potatoria*, *Ph. culmella*, *Chrysomela Graminis*, and several others.

Class IV. TETRANDRIA, contains several AGGREGATE FLOWERS, (*aggregatæ*, which are included within one common calyx, as in the compound flowers, but differ from these in having four stamina, the anthers distinct from each other, and the corolla above the germen:

It also contains another natural order of plants, the STELLATED (*stellatæ,*) from the manner of growth of the leaves, several together being placed in sets, round the stalk, radiating together like the glory of a star, and each set rising regularly one above the other.

It may be here just noticed, that the stamens in this class are 4, and *all of the same length;* whereas in the class DIDYNAMIA, which is likewise composed of flowers of 4 stamens, the stamens are *unequal in length*, 2 of them being long and 2 short.

Class V. PENTANDRIA, contains the natural order of the EARLY *(Preciæ)*, named so from their flowering early, and the ROUGH-LEAVED *(Asperifoliæ)*, from the roughness of the leaves, also the LURID *(Luridæ)*, called so from their gloomy aspect, and disagreeable scent, being plants highly poisonous.

This class contains likewise the natural order of UMBELLIFEROUS PLANTS *(umbellatæ)*, whose flowers are produced in *umbels,* which are peduncles or flower-stalks proceeding from one common centre, each terminated by a flower. This is then called the *general*, or *universal umbel.* But not unfrequently these thread-like peduncles, instead of bearing at their extremities the flowers, are themselves the fulcra, or points of origin of other smaller, or *partial umbels.* The flower itself is distinguished by five small petals usually unequal, and two seeds joined at top and separate below.

This tribe of plants is subdivided by some authors into such as have both a general and partial INVOLUCRE, such as have only a partial one, and such as have none at all; but as the INVOLUCRES are not very constant, and in some species are apt to fall off, and as the corollas, stamens, and pistils, are so much alike as to afford but little assistance in the determination of the genera and species, the student is desired to pay particular attention to the *seeds*, which furnish the most unequivocal generic characters, and often come powerfully in aid of the specific character. On this account, it is necessary when examining these to gather some specimens in which the seeds are nearly ripe, and others but just opening into flowers.

The umbelliferous plants in dry situations are aromatic and carminative; in moist ones, acrid, and sometimes poisonous. The greatest virtues are contained in the seeds and roots. Many of them are eaten at our tables, as the roots of CARROT and PARSNEP, and the leaves of CELERY. The seeds of CORIANDER and CARAWAY are used in confectionary.

Class VI. HEXANDRIA, contains the natural tribe of the LILIES (*Liliaceæ*).

The flowers of this class contain six stamens, all of the *same length*, whereas in the TETRADYNAMIA class, the stamens though six in number, are *unequal in length*, 4 of them being long, and 2 of them short; but as the difference in their length is not always very obvious, it may further be remarked, that in the Hexandria class, *none* of the flowers have 4 petals, as is the case with *all* those of the class TETRADYNAMIA.

The Bulbous Roots in this class are some of them noxious, as those of the Narcissus, the Hyacinthus, and the Fritillaria; others are corrosive, as Allium, but by roasting or boiling, they lose great part of their acrimony.

Although Class XI. Dodecandria implies by the name twelve stamina, yet it includes from twelve to nineteen inclusive, and if more than nineteen, inserted on the receptacle, the flower falls under class XIII. Polyandria; if more or even less than twenty inserted on the calyx or corolla, under Class XII. Icosandria.

2. *Classes derived from the consideration of the Number and Insertion of Stamina.* The appellations of these have the same origin, as in the classes above, thus:—

Class XII. Icosandria, from ικοσι, IKOSI, *twenty*, and ανηρ, ANER, *a male.*

Class XIII. Polyandria, is so called from πολυς POLUS, *many*, and ανηρ, ANER, *a male.*

Class XII. Icosandria, is so called from the number of males, usually being twenty, though very frequently there is observed a greater number. In this class are to be found the *fruit-trees.* The calyx in them is monophyllous, concave, fleshy, and the stamina are inserted into it, or the corolla, which is usually five-petalled.

Class XIII. Polyandria, on the contrary, instead of possessing edible fruits, contain chiefly plants possessing poisonous qualities.

The flowers of this class have, as its title implies, *many* stamens, that is, from 20 to 100 or more, so that it is unnecessary to attempt to count them, further than to be satisfied that they may amount to 20 or upwards. The situation of the stamens, as standing UPON THE RECEPTACLE, is sufficient to distinguish it from the preceding class, in which they do not stand upon the receptacle, but either upon the sides of the Calyx or else upon the Petals. A regard to this circumstance will be a surer guide than an attention merely to the NUMBER of the stamens. If the eye does not at once determine the exact situation of the stamens, carefully and slowly pull off the petals, and the segments of the calyx; if the stamens remain in their place, they may then be considered as growing upon their receptacle.

3. *Classes derived from the consideration of Number and Proportion.*

Class XIV. DIDYNAMIA, from δις, DIS, *two*, and δυναμις, DUNAMIS, *power*.

Class XV. TETRADYNAMIA, from τεσσαρες, TESSARES, *four*, and δυναμις, DUNAMIS, *power*.

Class XIV. DIDYNAMIA, contains the *labiate* or *lipped-flowers*, from LABIUM, *a lip*, which branches into two kinds, 1. *Ringent*, from RINGERE, to gape, which is a monopetalous tubular corolla, whose border is divided into two parts, called the *upper* and *under-lip*: The upper lip is by some called the *helmet*, and the under the *beard*; the opening between these two lips is called the *hiatus*, or *gape*; the entrance into the tube, the *throat*; and the upper part of the tube, the *neck*—

and 2. *Personate*, from PERSONA, a mask, which has the appearance of the snout of some animal, the two lips being closed, therefore there is no *hiatus* or *gape.* The seeds of the former are naked, of the latter capsuled. And, lastly, the ringent include the natural order of the *verticillate*, VERTICILLATI, plants so called from the flowers being placed in *whorls* round the stem, add to which the leaves are in pairs, and the stalks square. This natural tribe is very remarkable for giving out a strong and in some instances a pleasant smell.

Class XV. TETRADYNAMIA, contains the *cruciform* natural tribe of plants, the (*cruciferæ*) from CRUX, CRUCIS, *a cross*, being four equal petals, placed in the form of a X. These are fastened to the receptacle, within the calyx, by a pale narrow linear part called the *unguis*, or *claw*, and spreads out at right angles to it, into a broad flat coloured part, called the *lamina*.

The plants of this Class are universally found to be *Antiscorbutic*, their taste is acrid and watery, they lose most of their virtues by drying. None of them are poisonous.

In moist situations, and wet seasons, they are most acrimonious. Thus the COCHLEARIA *Armoracia*, (Horse-radish) growing near water, is so very acrid, that it can hardly be used; and BRASSICA *Rapa*, (Turnip) whose root in a dry sandy soil is so succulent and sweet, in wet stiff lands is hard and acrimonious.

4. *Classes derived from the consideration of Union.*

Class XVI. Monadelphia, from μονος, monos, *one*, and αδελφος, adelphos, *a brother*.

Class XVII. Diadelphia, from δις, dis, *two*, and αδελφος, adelphos, *a brother*.

Class XVIII. Polyadelphia, from πολυς, polus, *many*, and αδελφος, adelphos, *a brother*.

Class XIX. Syngenesia, from συν, sun, *together*, and γενεσις, genesis, *generation*.

Class XX. Gynandria, is from γυνη, the female, most conspicuous here, and ανηρ, the male.

Class XVI. Monadelphia, contains the *natural* order, the column-bearing plants (*columniferæ*), from the receptacle standing up in the centre of the flower like a column, encompassed by the webbed, or united, filaments, forming one body.

In this class the filaments are all united together at the bottom, but separate at top.

The petals are truly a continuation of the cylindrical sheath, formed by the united filaments, which encloses the styles and germens as it descends, and which afterwards spreads out into petals.

Class XVII. Diadelphia, contains the papilionaceous flowers (*papilionaciæ*), a truly natural tribe, a name derived from papilio, a butterfly, which this flower is supposed to resemble: It has four irregular petals, the upright one is called the *banner*, the side ones, the *wings*, and the under one the *keel*. There are nine stamina united, and one above separated in most instances by the slightest art, or by the swelling of the legume, or pod.

In some cases all the ten adhere into one body, when the structure of the flower determines the class, which is perfectly natural and singular, being generally obliquely pendant.

The SEEDS of this class furnish food for men, and other animals: they are farinaceous and flatulent. The LEAVES are food for cattle. None of them are poisonous.

Dr. Pulteney, in a note added to his translation of the Pan Suecicus, says, "A general view of this class, "shews at once how very acceptable its plants are to "almost all cattle; cows and sheep refused none, and "horses not more than three, out of the whole number "with which they were tried. They afford the richest "food for cattle, and are cultivated in divers parts of "Europe, with all possible attention. With us, the "TRIFOLIUM, *pratense*, (or *Clover*), is mostly sown. "Lately some trials have been made with the HEDYSARUM *Onobrychis*, (*Saintfoin*), and some have "thought that it answers better than clover. I say nothing of the exotic *Lucern*. Among these plants the "ANTHYLLIS *vulneraria* is particularly acceptable to "sheep; insomuch, that the separate cultivation of it "has been recommended, but it will not succeed well "except on chalky grounds." (See Dr. Pulteney's judicious work, entituled, "A General View of the Life and

Writings of Linnæus," of which a most superb and highly enriched new edition has been published by the learned and ingenious Doctor Maton.)

Class XVIII. POLYADELPHIA, has the filaments united at bottom into one or more parcels, hence they form an appearance like the camel's-hair pencil. If you were not to attend to this character, you might easily suppose these plants to belong to the Class XIII. POLYANDRIA; for there are here no natural families, as in the last class, announcing immediately upon the first sight to what class they belong.

Class XIX. SYNGENESIA, contains the natural family of COMPOUND FLOWERS (*Compositi*), being made up of an assemblage of small-flowers, or florets. Compound flowers are easily distinguished, by considering that the corolla is either *tubular* or *ligulate*, and that the whole flower is composed of such florets, all *tubular*, or all *ligulate*, or a mixture of *both* kinds, and that the anthers, which are five, form a sheath round the pistillum. The florets in the centre are styled the *Disk*, in the circumference the *Ray*, and such are called *Radiate Flowers*, as the BELLIS PERENNIS (*Daisy*), &c. and should any one of these florets be removed, a disfiguration takes place. These possess also a *common Calyx*, and a *common Receptacle*, which ends with a bifid stigma. *Syngenesia* is a kind of connecting link, betwixt the other classes, and the three just now going to be enumerated, for the different sexes are joined in the radiated compound flower.

Class XX. GYNANDRIA, strikes the beholder by the monstrous appearance of the fructification, and contains the natural tribe of ORCHISES (*orchideæ*), and the beautiful tribe PASSIFLORA (*Passion-flower*).

V. *Classes derived from the consideration of separation.*

Class XXI. Monœcia, from μονος, MONOS, *one*, and οικος, OIKOS, *a house*.

Class XXII. Diœcia, from δις, DIS, *two*, and οικος, OIKOS, *a house*.

Class XXIII. Polygamia, from πολυς, POLUS, many, and γαμος, GAMOS, *marriages*.

In Classes XXI. Monœcia, and XXII. Diœcia, we find no complete flowers at all, (flowers furnished with stamina and pistilla in the same corolla) but either stameniferous, or pistilliferous flowers, and as these are placed either upon the same plant, or on different plants of the same species, we have the characters of these classes. As in these unisexual plants, the stamens and pistils are situated at a distance from each other, so that the facility of an intercommunication between them is certainly less than in the bissexual flowers, where they are situated within the same cover (calyx or corolla), Nature has wisely ordered it, that in these particular plants they shall, in general, make their appearance before the full evolution of the leaves, so that the fecundation is not hindered by the intervention of the leaves. This is known to be the case in the Mulberry, the Misletoe, the Alder, the Birch, the Hornbeam, the Beech, the Oak, the Hazel, the Walnut, the Willow, the Sea Buckthorn (*Hippophae*), the Dutch Myrtle (*Myrica*), the Poplar, the Ash, and the Dog's Mercury (*Mercurialis*).—How impressively does this fact mark the hand of an intelligent Being, in the construction and government of the world!

Class XXIII. Polygamia, is established upon the same views of Nature, as in some of the compound flowers, consisting of *complete* flowers, accompanied by one or both sorts of the other individuals, (*incomplete* flowers) either upon the same plant, or on remote individuals of the same kind.

The wise provision of nature in the *marriage of plants*, demands a separate consideration. She is contitinually raising up difficulties and overcoming them, making botanical science an interesting and amusing occupation of the mind. At every step, it leads us to remark and admire the bounty, the wisdom, and power of the Omnipotent Creator.

VI. *Class derived from the consideration of concealment.*

Class XXIV. Cryptogamia, from κρυπτος, kruptos, concealed, and γαμος, gamos, marriage.

Many doubts exist, whether these have sexes or not. Hedwig supposes he has discovered stamina and pistilla, but others deny this, and think they propagate by *buds*, or *offsets*.

Mosses and ferns, by the inconsiderate mind, are generally deemed an useless or insignificant part of the creation. That they are not is evident only from hence; that he who made them has formed nothing in vain; but, on the contrary, has pronounced all his creation to be *good.* Many of their uses we know; that they have many more, which we know not, is unquestionable, since there is probably no one thing in the universe of which we can dare to assert that we know *all* their uses. Thus much we are certain of with respect to mosses, that as they flourish most in winter, and at that time cover the ground with a beautiful green carpet, in many places which would otherwise be naked, and when little verdure is elsewhere to be seen, so at the same time they shelter and preserve the seeds, roots, gems, and embryo plants of many vegetables, which would otherwise perish; they furnish materials for birds to build their nests with; they afford a warm winter's retreat for some quadrupeds, such as bears, dormice, and the like; and for numberless insects, which are the food of birds and fishes, and these again the food or delight of men. Many of them grow on rocks and barren places, and rotting away, afford the first principles of vegetation to other plants, which could never else have taken root there. Others grow in bogs and marshes, and, by continual increase and decay, fill up and convert them either into fertile pastures, or into peat bogs, the source of inexhaustible fuel to the polar regions.

They are applicable also to many domestic purposes. The *Lycopodiums* are some of them used in dying of yarn, and in medicine; the *Sphagnum* and *Polytrichum* furnish convenient beds for the *Laplanders;* and the *Hypnums* are used in tiling of houses, stopping crevices in walls, packing up of brittle wares, and the roots of plants for distant conveyance.

To which may be added, that all in general contribute entertainment and agreeable instruction to the contemplative mind of the naturalist, at a season when few other plants offer themselves to his view.

The *fungi* have been suspected by some to be like sponges and corals, the habitations of some unknown living beings, and being alkalescent, have been classed in the animal kingdom, but they are known to produce seeds, from which perfect plants have been raised. And the celebrated Hedwig, by great dexterity of dissection, and by using microscopes of very highly magnifying powers, assures us that he has discovered both stamina and pistilla not only in this order of plants, but in the four others.

ORDERS.

The orders of the first *thirteen* classes are founded on the *number* of Styles, or where this part is wanting, on that of the Stigmas, thus—

Order I. Monogynia, one Pistillum, is from μονος, monos, *one*, and γυνη, gune, *a female*, or in other words *one* style, or *one* stigma.

Order II. Digynia, two Pistilla, from δις, dis, *two*, and γυνη, gune, *a female*.

Order III. Trigynia, three Pistilla, from τρεις, treis, *three*, and γυνη gune, *a female*.

Order IV. Tetragynia, four Pistilla, from τετρας, TETRAS, *four*, and γυνη, GUNE, *a female.*

Order V. Pentagynia, five Pistilla, from πεντε, PENTE, *five*, and γυνη, GUNE, *a female.*

Order VI. Hexagynia, six Pistilla, from εξ, HEX, *six*, and γυνη, GUNE, *a female.*

Order VII. Heptagynia, seven Pistilla, from επτα, HEPTA, *seven*, and γυνη, GUNE, *a female.*

Order VIII. Octagynia, eight Pistilla, from οκτω, OKTO, *eight*, and γυνη, GUNE, *a female.*

Order IX. Enneagynia, nine Pistilla, from εννεα, ENNEA, *nine*, and γυνη, GUNE, *a female.*

Order X. Decagynia, ten Pistilla, from δεκα, DEKA, *ten*, and γυνη, GUNE, *a female.*

Order XI. Dodecagynia, twelve Pistilla, from δοδεκα, DODEKA, *twelve*, and γυνη, GUNE, *a female.*

Order XII. Polygynia, many Pistilla, from πολυς, POLUS, *many*, and γυνη, GUNE, *a female.*

Class XIV. Didynamia, has its two orders. A want, or the possession of a seed vessel, for the styles or stigmas here, are not able to furnish the contrast desired, being constantly one.

Order I. Gymnospermia, naked Seeds, from γυμνος, GUMNOS, *naked*, and σπερμα, SPERMA, *seed.*

Order II. Angiospermia, covered or capsuled Seeds, from αγγειος, AGGEIOS, αγγος, AGGOS, *a vessel*, and σπερμα, SPERMA, *seed*.

Class XV. Tetradynamia, has its two orders, viz.

Order I. Siliculosa, a round Pod, from silicula, *a little pod.*

Order II. Siliquosa, a long Pod, from siliqua, *a long pod*, and this from silo, *a nose turned up*, being usually curved.

The orders of Class XVI. Monadelphia; Class XVII. Diadelphia; and Class XVIII. Polyadelphia, are founded on the characters of the former classes, thus—Order I. is Pentandria, and so on to Order V. Polyandria. In Class XVIII. Polyadelphia, we have even Order III. Icosandria, which includes the Citrus, the *Orange*, for the consideration of *union of filaments* supersedes that of either *number alone*, or of *number and insertion*, and the classical character was found here very convenient to form orders; especially as Class XVII. Diadelphia, presented no variety in the pistilla. In our Reformed Sexual System, we have endeavoured to preserve the classical characters distinct to themselves, and placed these classes of Linnæus, as orders to the primary classes, which they naturally divide.—*Vide*, our Reformed Sexual System, p. 74.

The order of Class XIX. Syngenesia, likewise could not be founded on the pistils, there being but one, but are constituted from the *disposition* of the *florets*, thus,—

Order I. Polygàmia, ÆQUALIS, *equal marriage*, from πολυς, POLUS, *many*, and γαμος, *marriage*, implies, that the florets are numerous, and ÆQUALIS, *equal*, means that each flower is equally possessed of the two sexes, the florets are all alike, either ligulate or tubular florets.

Order II. Polygamia, SUPERFLUA, *superfluous Polygamy*, means that the florets in the *disk* (centre), being bissexual, produce seeds, and those in the *ray* (circumference), which are pistilliferous, are superfluous as the former were sufficient to continue on the species, and are hence styled by Linnæus, in his system, as *concubines*.

Order III. Polygamia, FRUSTRANEA, *needless Polygamy*, is so called from the florets in the *ray* being devoid of any sex, and their existence seemingly useless. But their petals serve as a defence for the central florets, by closing over them.

Order IV. Polygamia, NECESSARIA, *necessary Polygamy*, implies that the florets in the *disk* are stameniferous, and in the *ray* pistilliferous; and if those in *disk* were absent, there would be no seeds, hence the necessity of the pistilliferous flowers in the *ray*.

Order V. Polygamia, SEGREGATA, *separate Polygamy*, is where the florets are all equal, that is, bissexual, as with the first order, but *separate*, SEGREGATA, by having *a calyx to each floret,* which separates the florets individually.

Order VI. POLYGAMIA, MONOGAMIA, *many marriages, one marriage,* from μονος, MONOS, *one,* and γαμος, GAMOS, *marriage,* is a contradiction of terms, but explains to us Linnæus's idea of POLYGAMIA, *i. e.* many florets, producing a compound flower, and MONOGAMIA therefore means a simple flower, not having a ligulate or tubular petal, or clustered together on the same receptacles, but standing singly, and having the classical character of the compound florets. Dr. Smith has discarded this order altogether, for very good reasons. "The order MONOGAMIA," says this most distinguished botanist, "I have presumed to abolish, because the union of the anthers is not constant throughout the species of each genus referred to it, witness LOBELIA, and VIOLA; while, on the contrary, several detached species in other classes have united anthers, as GENTIANA. These reasons, which show the connection of the anthers of a simple flower to be neither important in nature, nor constant as an artificial character, are confirmed by the plants of this whole order being natural allies of others of the fifth class, and totally discordant, in every point, from the compound syngenesious flower." *Introduction to Physiological and Systematical Botany,* p. 400;—a rich mine of botanical knowledge!

To these remarks may be added, that the *heaths,* ERICAS, have their anthers united, and have eight stamens, each filament bearing two oblong, pointed *half* capsules, hence called *bicornes,* which, uniting with their neighbours, form *whole* capsules, and disperse their farina by separation; so the BUTOMUS UMBELLATUS, the *flowering rush*, having nine stamens, form two parcels of four, very closely united together at first; the MEADIA has five anthers united, like the *Heath*, the SOLANUM, also five united anthers, &c. so that this class very naturally falls into the rest, as will be seen in our REFORMED SEXUAL SYSTEM.

Class XXI. MONŒCIA, has for its orders all the classes of *number*, also the class of *union of filaments when forming one set*, that of *union of anthers* and *union with the pistillum*, vide, our Synthesis of Classes and Orders, p. 39.

Class XXII. DIŒCIA, the same; for, like AARON'S rod, which swallowed up all the rest, the consideration of *sexes apart* overcomes all other ideas. Vide p. 40, each class rising *superior* to the preceding.

Class XXIII. POLYGAMIA, hence takes its orders: Order I. MONŒCIA, Order II. DIŒCIA, and Order III. TRIŒCIA, the last is supposed to exhibit *bissexual, male* and *female flowers*, growing separately, on three distinct plants, of the same species, from τρεις, TREIS, *three*, and οικος, OIKOS, *a house.*

Class XXIV. CRYPTOGAMIA, contains the natural orders expressed in our SYNTHESIS, p. 42.

APPENDIX PALMÆ. The natural order of PALMS was so little understood when Linnæus formed his systematic arrangement of plants, and so few of their flowers had been then scientifically examined, that he was under the necessity of leaving this order as an appendix to his system, till it could be better investigated. Late observations show PALMS to have, for the most part, six stamens, rarely three or nine, with three or six petals, and one or three styles, which last are sometimes in the same flowers with the stamens, sometimes in a separate one, but both flowers agree in a peculiar structure, which evinces how discordant must be an *artificial* from a *natural arrangement;* to use the words of an *old botanist*, professor Martyn, " he must strive in vain, who shall ever think to reconcile the two together."

THE

REFORMED

SEXUAL SYSTEM.

THE REFORMED SEXUAL SYSTEM.

BY DR. THORNTON.

> Desine quapropter *novitate* exterritus *ipsa*
> Expuere animo *rationem* : sed magis acri
> Judicio perpendere, et si tibi *vera* videtur
> *Dede manus.*
>
> LUCRET.

CLASSES.

I. *Classes taken from the Number of Stamina.*

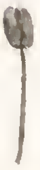
I.	*Monandria*	one Stamen.
II.	*Diandria*	two Stamina.
III.	*Triandria*	three Stamina.
IV.	*Tetrandria*	four Stamina.
V.	*Pentandria*	five Stamina.
VI.	*Hexandria*	six Stamina.
VII.	*Heptandria*	seven Stamina.
VIII.	*Octandria*	eight Stamina.
IX.	*Enneandria*	nine Stamina.
X.	*Decandria*	ten Stamina.
XI.	*Dodecandria*	12 to 19 Stamina.
XII.	*Polyandria*	20 or more Stamina.

I. *A Class taken from the obscurity of the Stamina.*

XIII.	*Cryptogamia*	concealed Stamina.

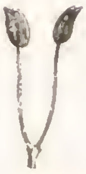
CLASSES of the Reformed Sexual System, Taken from the Number of Stamina only.

I.



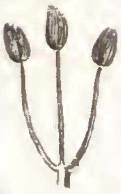
1 Stamen.
(Monandria)

II.



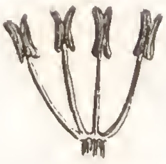
2 Stamina.
(Diandria)

III.



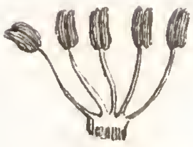
3 Stamina.
(Triandria)

IV.



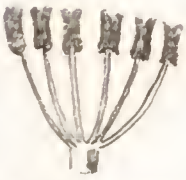
4 Stamina.
of equal length
(Tetandria)

V.



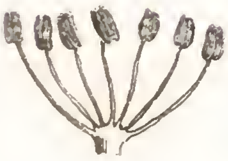
5 Stamina.
(Pentandria)

VI.



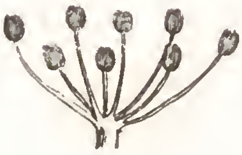
6 Stamina,
of equal length
(Hexandria)

VII.



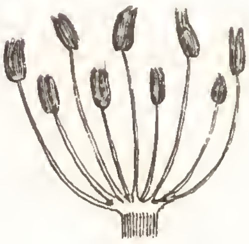
7 Stamina.
(Heptandria)

VIII.



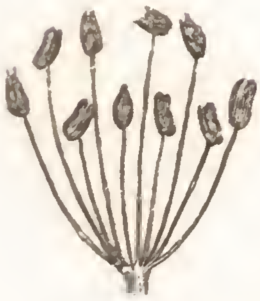
8 Stamina.
(Octandria)

IX.



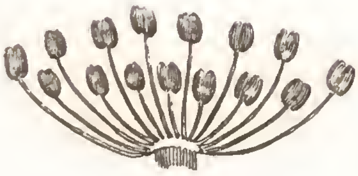
9 Stamina.
(Enneandria)

X.



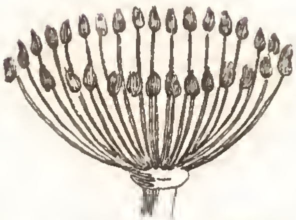
10 Stamina.
(Decandria)

XI.



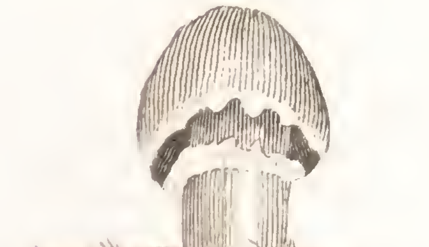
12 to 19 Stamina.
(Dodecandria)

XII.



20 or more Stamina,
arising from the Receptacle.
(Polyandria)

XIII.



No visible Stamina.
(Cryptogamia)

NB. The Stamina are reckoned by the Number of Anthers.

n del. *Mazel . scul*

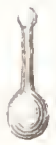
London Published by Dr Thornton Augst 1.1810

First,

ORDERS taken from the Number of Pistilla.

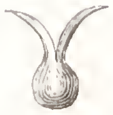
Ordinary Flowers.

I.



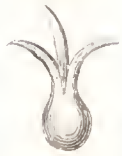
1 Pistillum.
(Monogynia)

II.



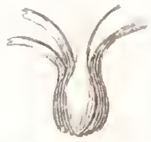
2 Pistilla.
(Digynia)

III.



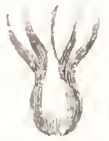
3 Pistilla.
(Trigynia)

IV.



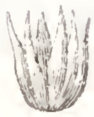
4 Pistilla.
(Tetragynia)

V.



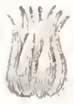
5 Pistilla.
(Pentagynia)

VI.



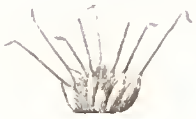
6 Pistilla.
(Hexagynia)

VII.



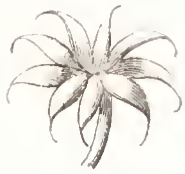
7 Pistilla.
(Heptagynia)

VIII.



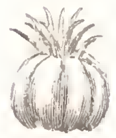
8 Pistilla.
(Octogynia)

IX.



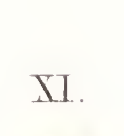
9 Pistilla.
(Enneagynia)

X.



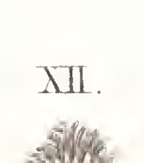
10 Pistilla.
(Decagynia)

XI.



12 to 20 Pistilla.
(Dodecagynia)

XII.



Many Pistilla.
(Polygynia)

NB. The Pistilla are reckoned by the Number of Styles

Henderson del.

Mazel sculp

London Published by Dr. Thornton Aug.st 1 1810

ORDERS.

I. *Orders taken from the number of Pistilla.*

I.	*Monogynia*	one Pistillum.
II.	*Digynia*	two Pistilla.
III.	*Trigynia*	three Pistilla.
IV.	*Tetragynia*	four Pistilla.
V.	*Pentagynia*	five Pistilla.
VI.	*Hexagynia*	six Pistilla.
VII.	*Heptagynia*	seven Pistilla.
VIII.	*Octogynia*	eight Pistilla.
IX.	*Enneagynia*	nine Pistilla.
X.	*Decagynia*	ten Pistilla.
XI.	*Dodecagynia*	12 to 19 Pistilla.
XII.	*Polygynia*	20 or more Pistilla.

II. *Orders taken from some curious particularity in the Stamina.*

XIII.	*Didynamia*	four Stamina, two long, two short.
XIV.	*Tetradynamia*	six Stamina, four long, two short.
XV.	*Icosandria*	twenty or more Stamina inserted on the Calyx, or Corolla.
XVI.	*Monadelphia*	filaments united, in one body.
XVII.	*Diadelphia*	filaments united, forming two bodies.
XVIII.	*Polyadelphia*	filaments united, forming 3, or more bodies.
XIX.	*Syngenesia*	five anthers, united.
XX.	*Gynandria*	Stamina, arising from the Pistil.
XXI.	*Monœcia*	Stamina apart from the Pistil, on the same plant.
XXII.	*Diœcia*	Stamina arising from the Pistil on different Plants.
XXIII.	*Polygamia*	bissexual and unisexual flowers.

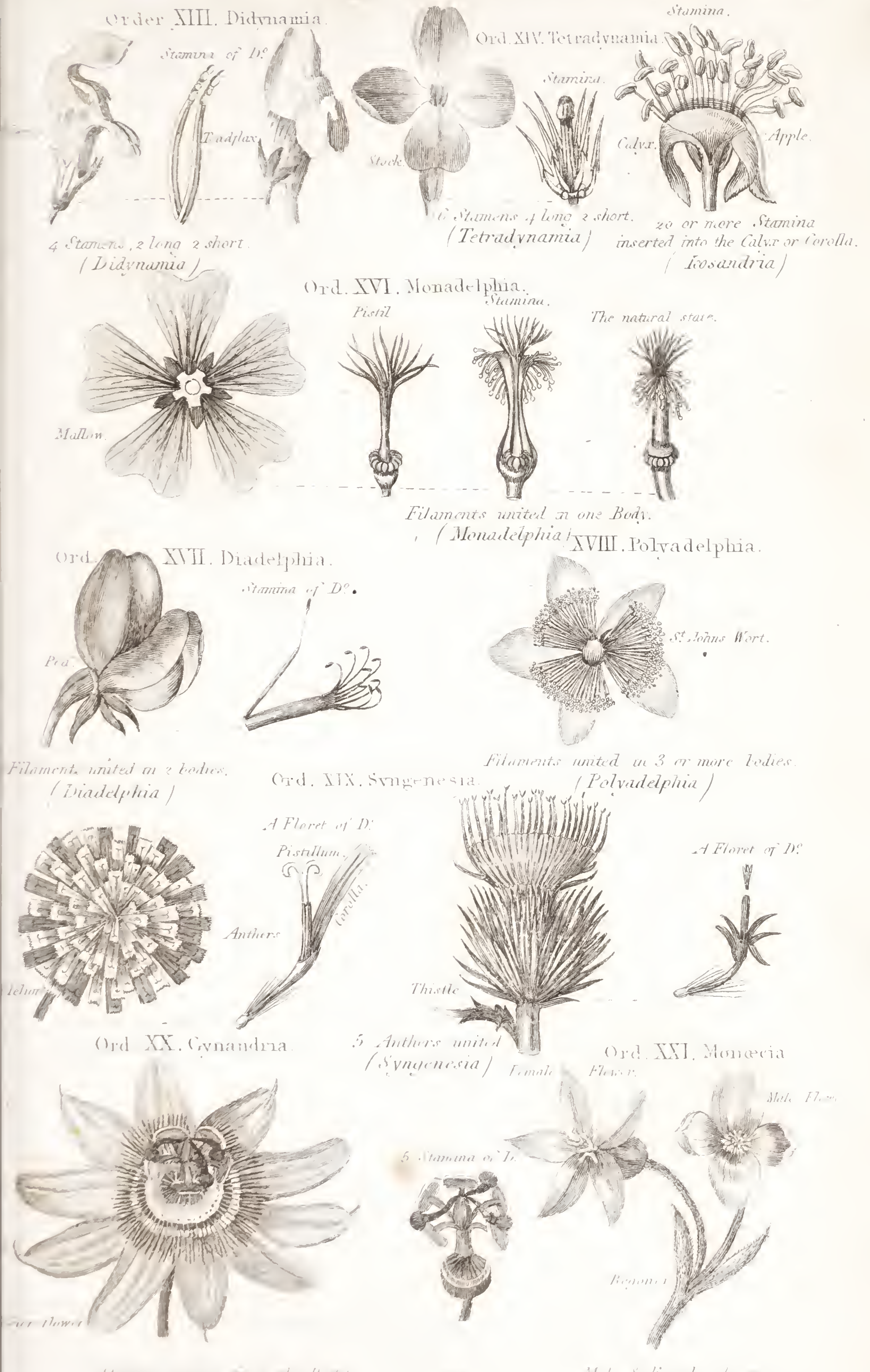
Class CRYPTOGAMIA has the Natural Orders.

I. *Filices.* II. *Musci.* III. *Algæ.* IV. *Fungi.*

Secondly

RDERS derived from certain Peculiarities in the Stamina.

Peculiar Flowers.



Stamina arising from the Pistil or from a Pillar elevating the same *(Gynandria)*

Male & Female flowers growing on the same plant *(Monœcia)*

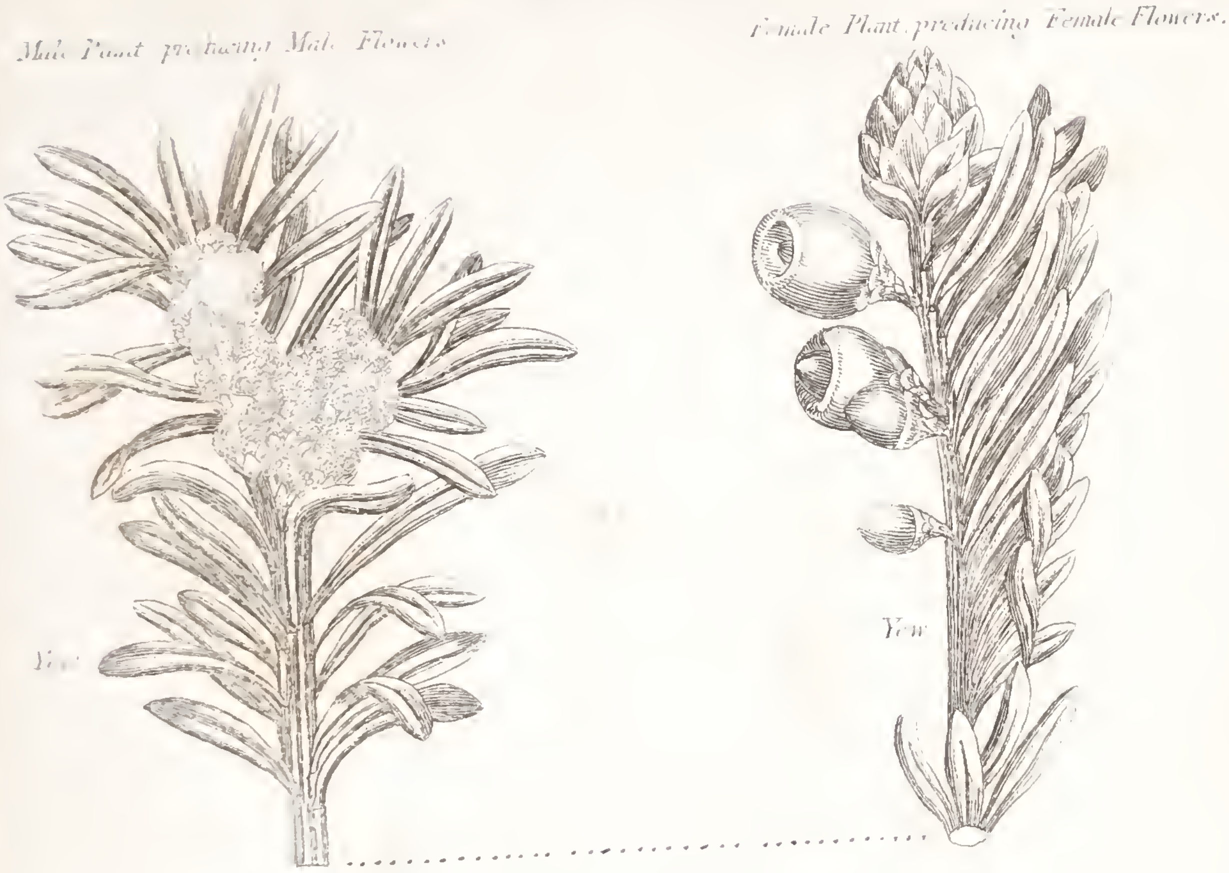
[illegible] del. *[illegible] sculp.*

London, Published by [illegible]

Plate 3.

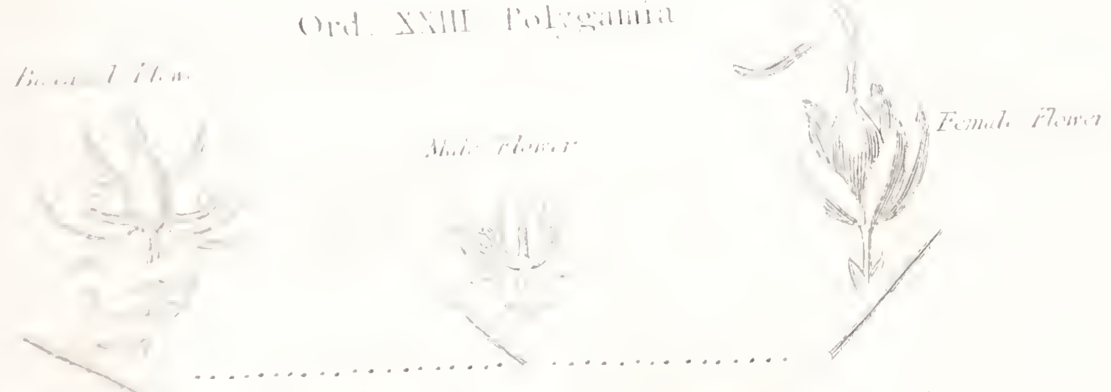
Continuation of Consideration II.

Ord. XXII. Diœcia.


Male Plant producing Male Flowers
Female Plant producing Female Flowers.
Yew
Yew

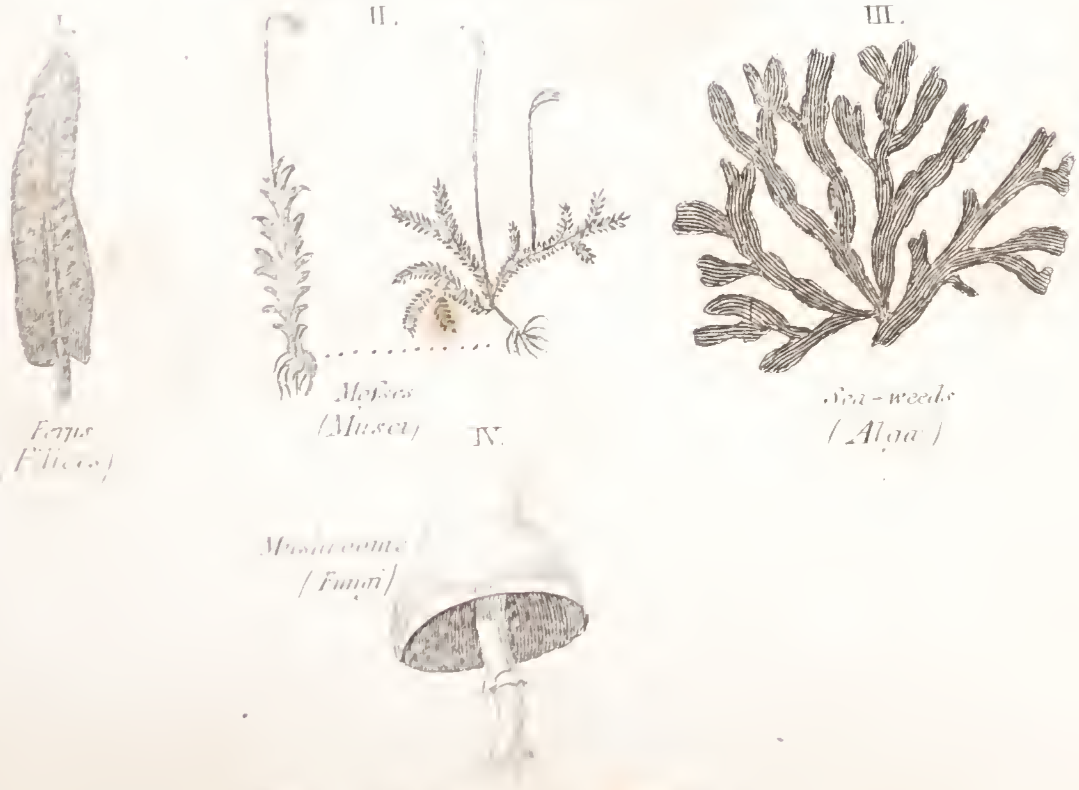
Stamens apart from the Pistil on different Plants.

Ord. XXIII. Polygamia



[illegible] Flowers with [illegible] Female Flowers [illegible] sorts.

Ord. XXIV. Cryptogamia



[illegible]

Claſs 1.

MONANDRIA.

One Stamen

Gauci sc. Charles Str.t Soho Sq.

Plate wanting

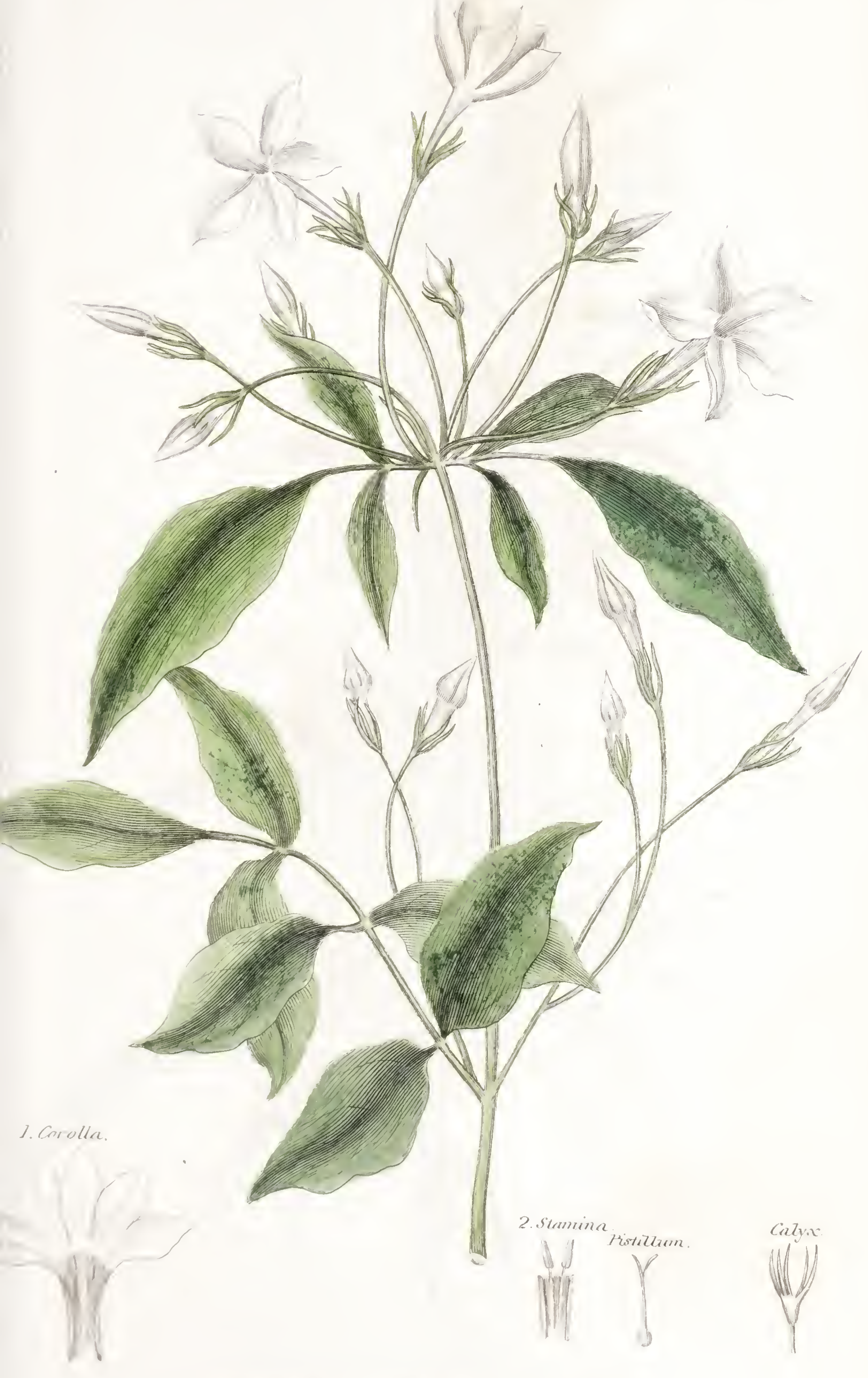
Claſs 2,

DIANDRIA.

Two Stamina

Curtin sc.

Jasminum officinale, or common white Jasmine.


1. Corolla.
2. Stamina.
Pistillum.
Calyx.

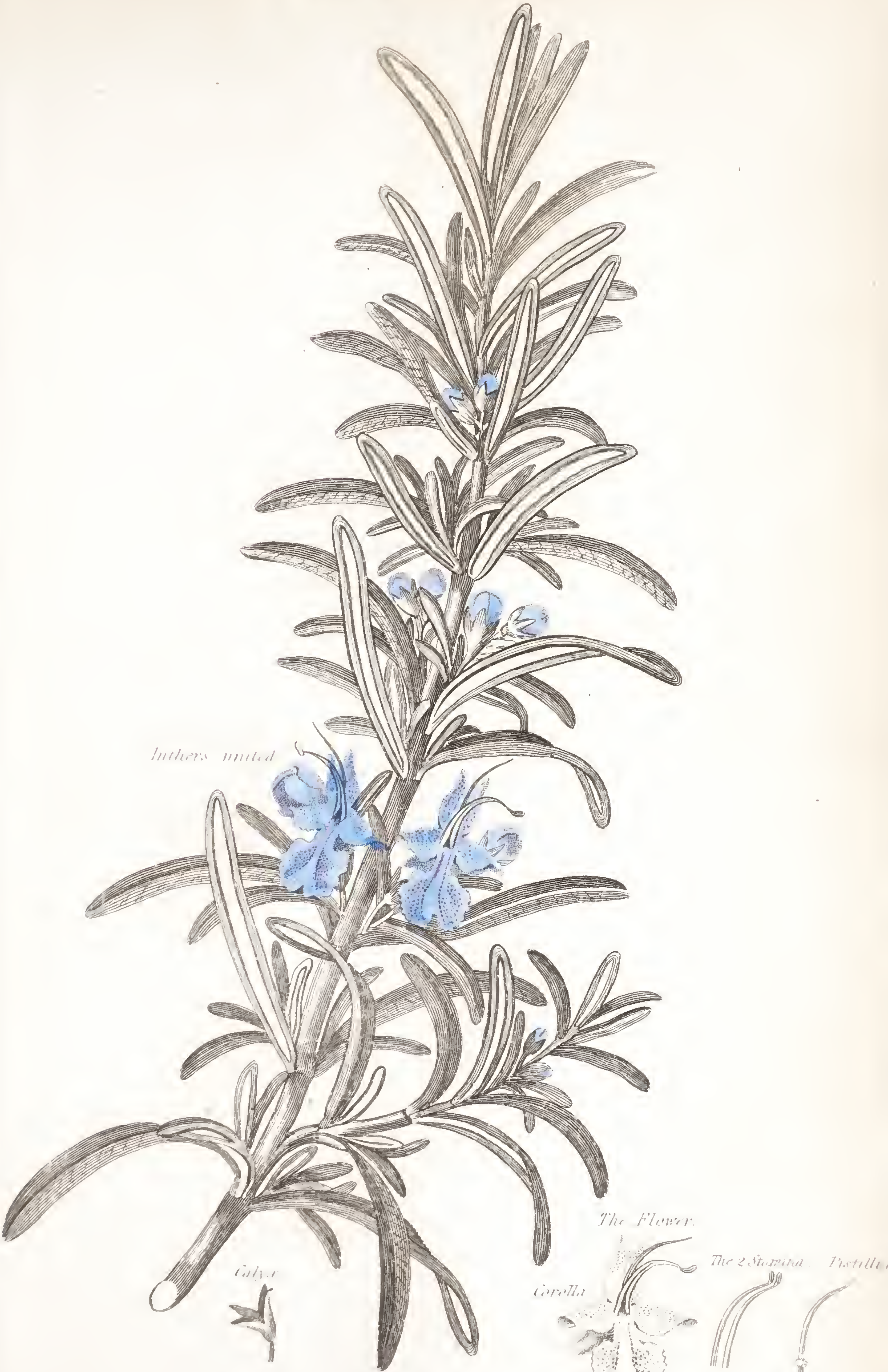
London, Published for Dr. Thornton, Jany. 1 1812.

Henderson del.

Eves sculp.

ROSMARINUS OFFICINALIS,

COMMON ROSEMARY.



A Plant from the South of Europe

(Of Claſs II Diandria Order I Monogynia of Linnaeus.)

Cooper sculp

London Published by Dr Thornton Dec. 1 1810

Claſs 3.

TRIANDRIA.

Three Stamina.

Cartin sc.

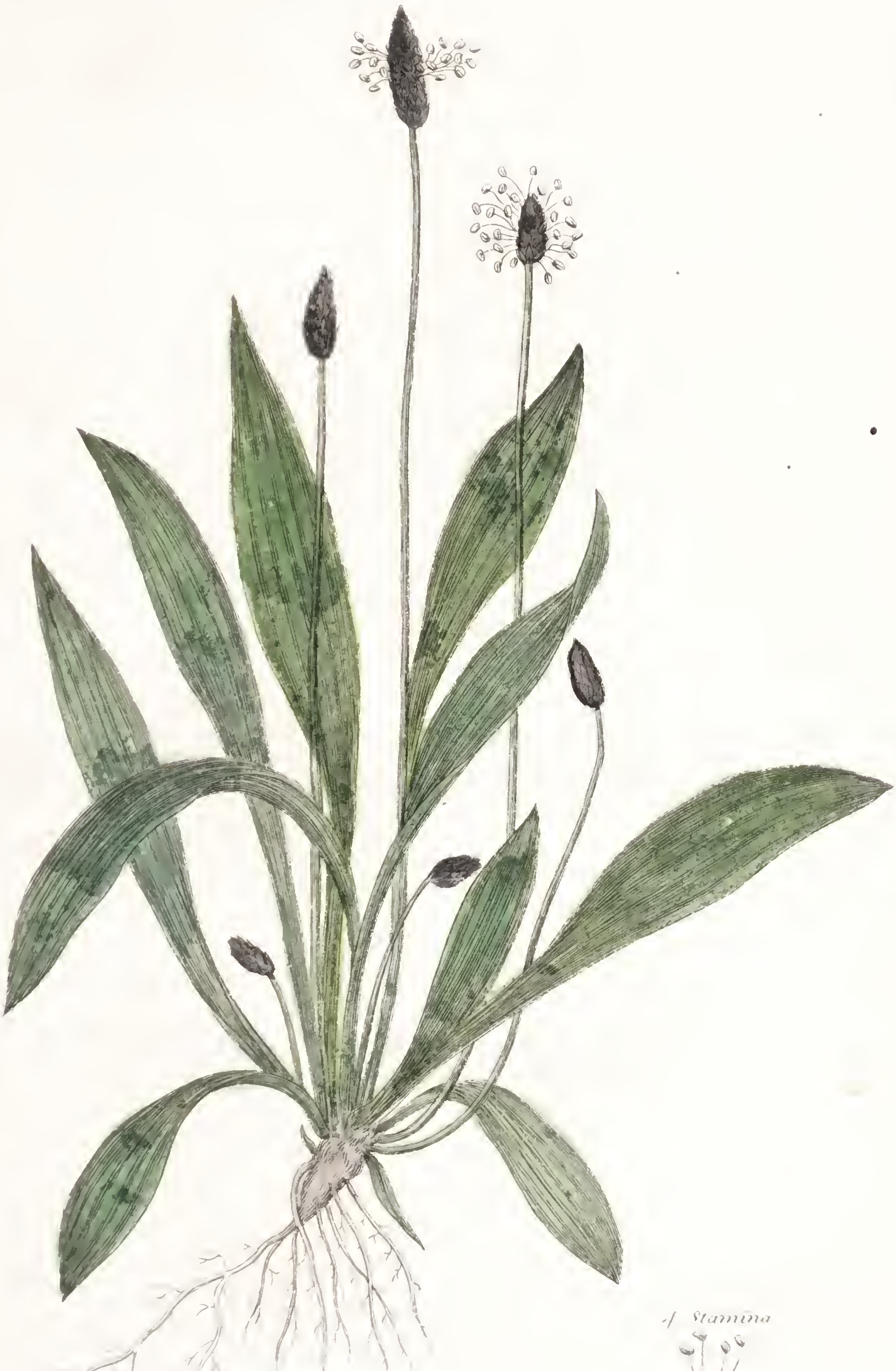
Claſs 4.

TETRANDRIA.

Four Stamina

[illegible]

Plantago lanceolata, or Ribwort Plantain.



Henderson sculp

Eves sculp

London Published by Dr Thornton Jany 1.1812.

Class 5.

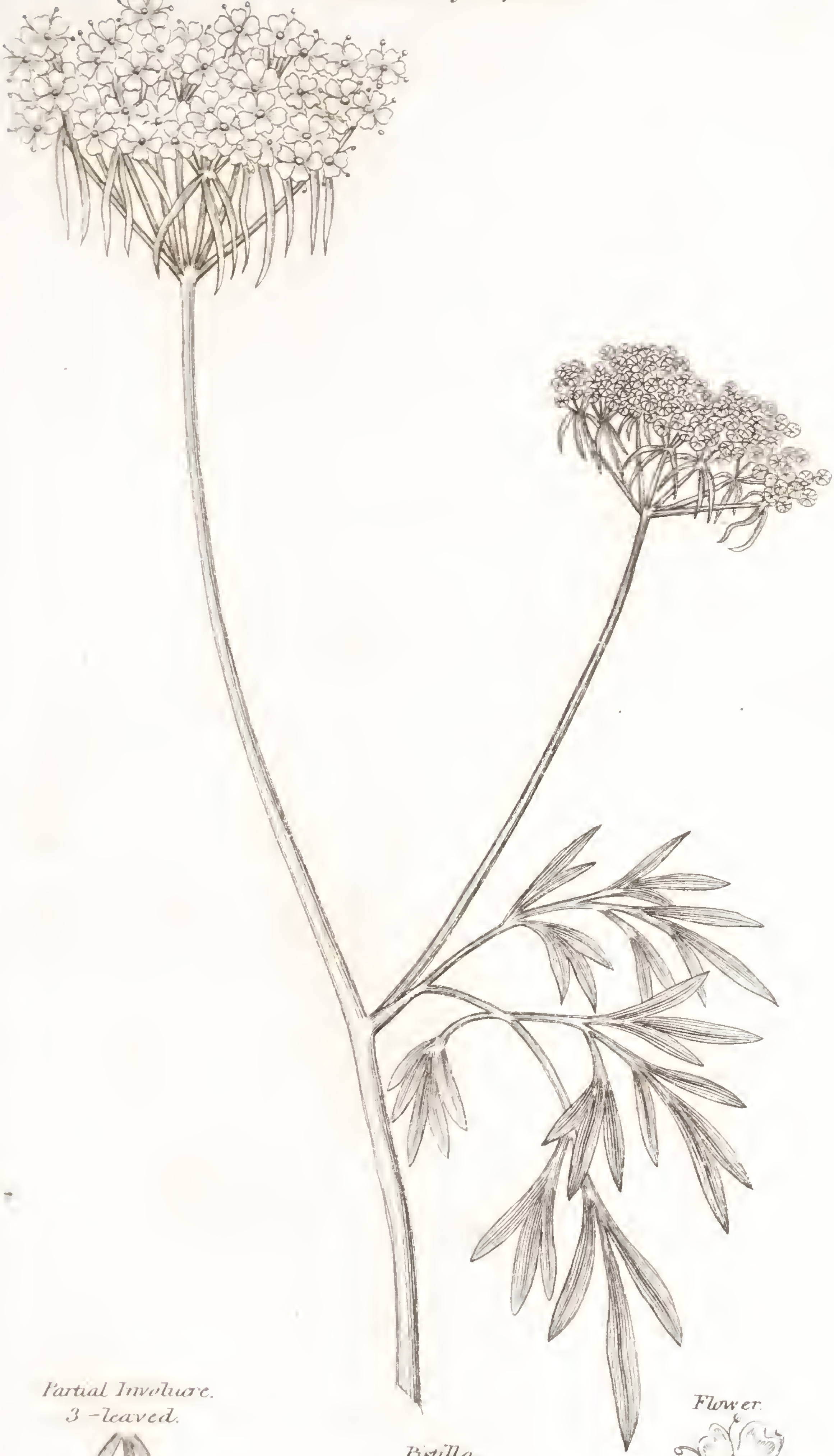
PENTANDRIA

Five Stamina

Curtis sc!

Fool's Parsley.

Æthusa Cynapium.



Partial Involucre.
3-leaved.

Pistilla.

Flower.

London, Published for Dr. Thornton, Jany. 1. 1812

Claſs 6.

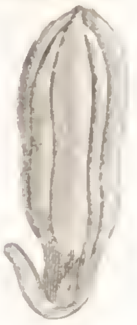
HEXANDRIA.

Six Stamina

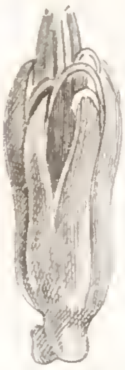
[illegible]

Anatomy of the Agave, or American Aloe.

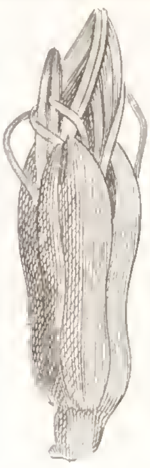
1. First Stage.
Petals closed.



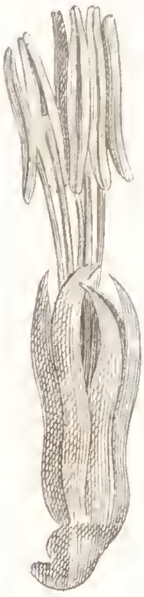
2. Second Stage
Anthers peeping
Filaments curled downwards.



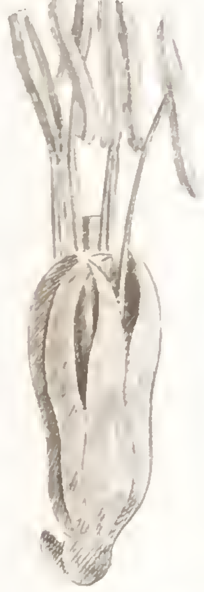
3. Third Stage.
Filaments taking their position.



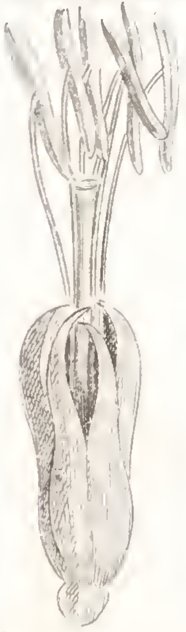
4. Fourth Stage.
Filaments erect.



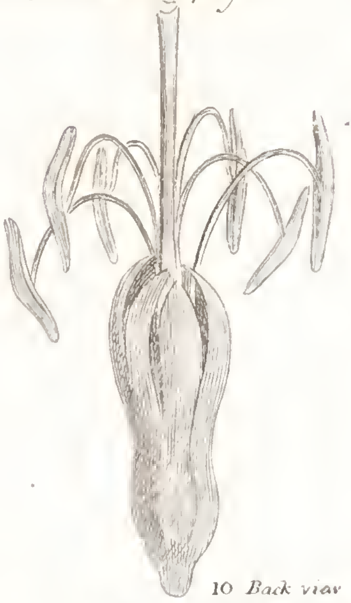
5 Fifth Stage.
Pistillum peeping.



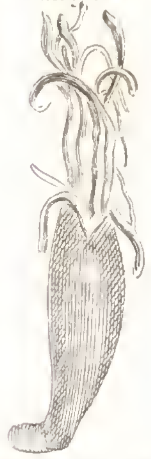
6 Sixth Stage.
Pistillum nearly the height of the stamina
Flower in Perfection.



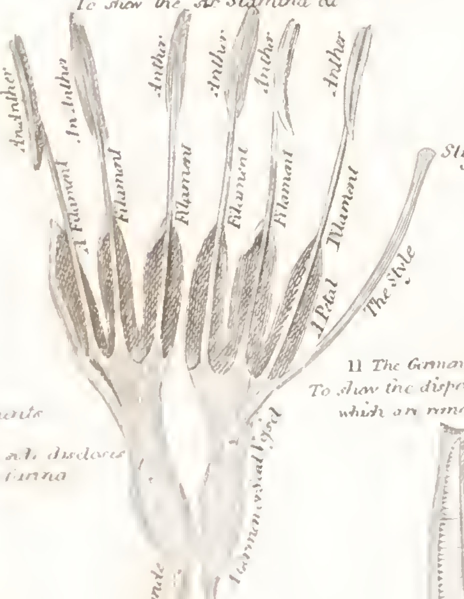
7 Seventh Stage
The impregnated Pistillum elongated
The Stamina drooping



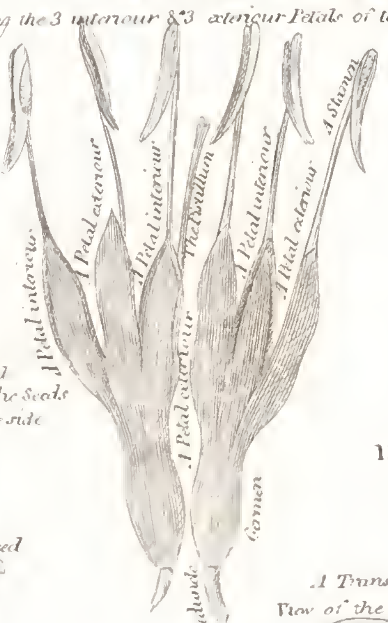
8 Eighth Stage
All except the Germen
decayed



9 Front view
To shew the six Stamina &c



10 Back view
Shewing the 3 interiour & 3 exteriour Petals of the Corolla.



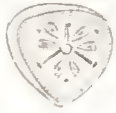
The Anther & Filaments
enlarged
[illegible] discloses
the [illegible]

11 The Germen magnified
To shew the disposition of the Seeds
which are removed on one side

a Seed

13 Pistillum enlarged
The Stigma 3 headed.

A Transverse
View of the Germen.



[illegible] del.

Smart sculp.

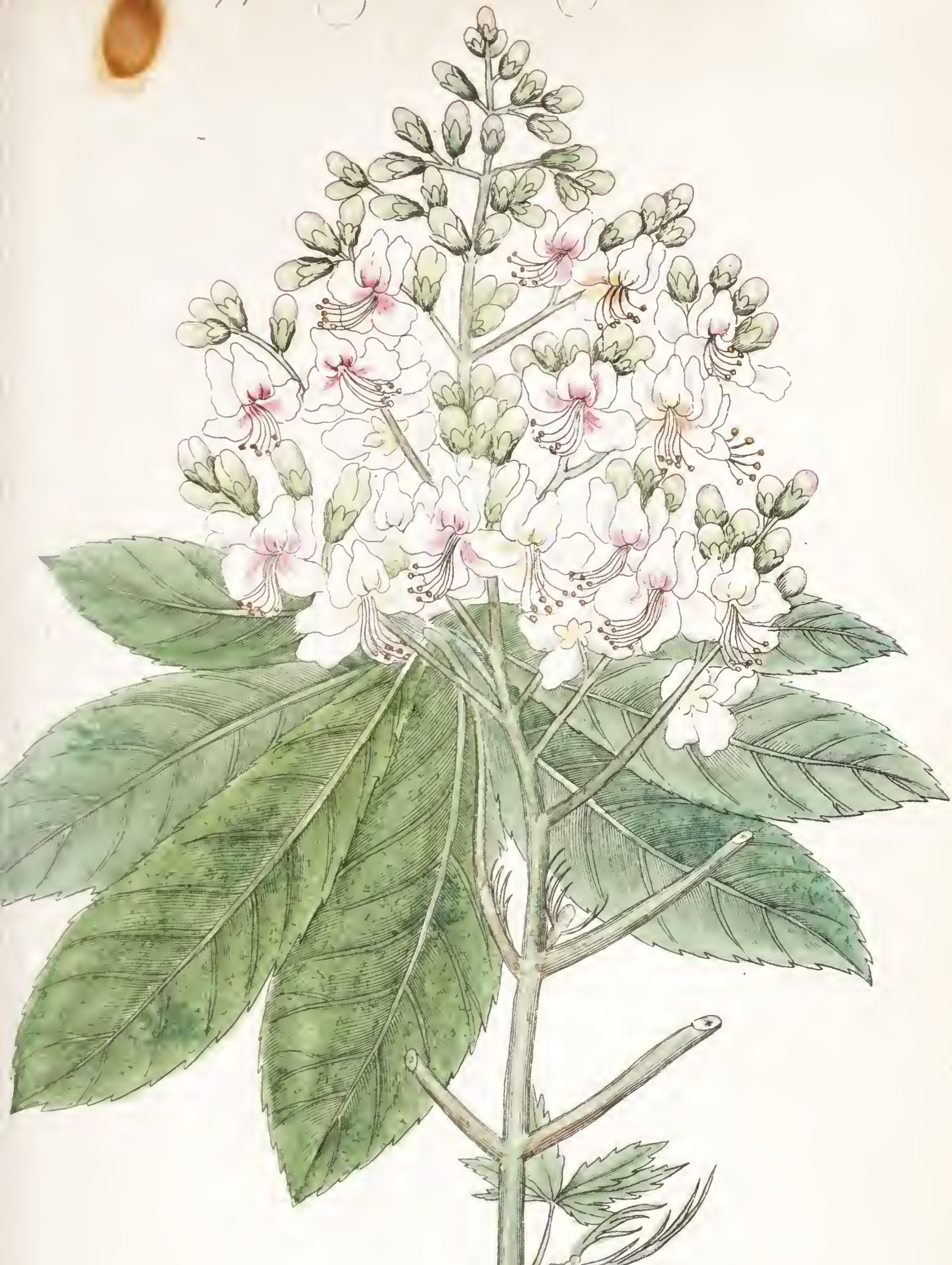
London Published by Dr. Thornton, Septr. 2.1811.

Claſs 7.

HEPTANDRIA.

Seven Stamina.

Æsculus Hippo-Castanum or Common Horse-Chesnut.



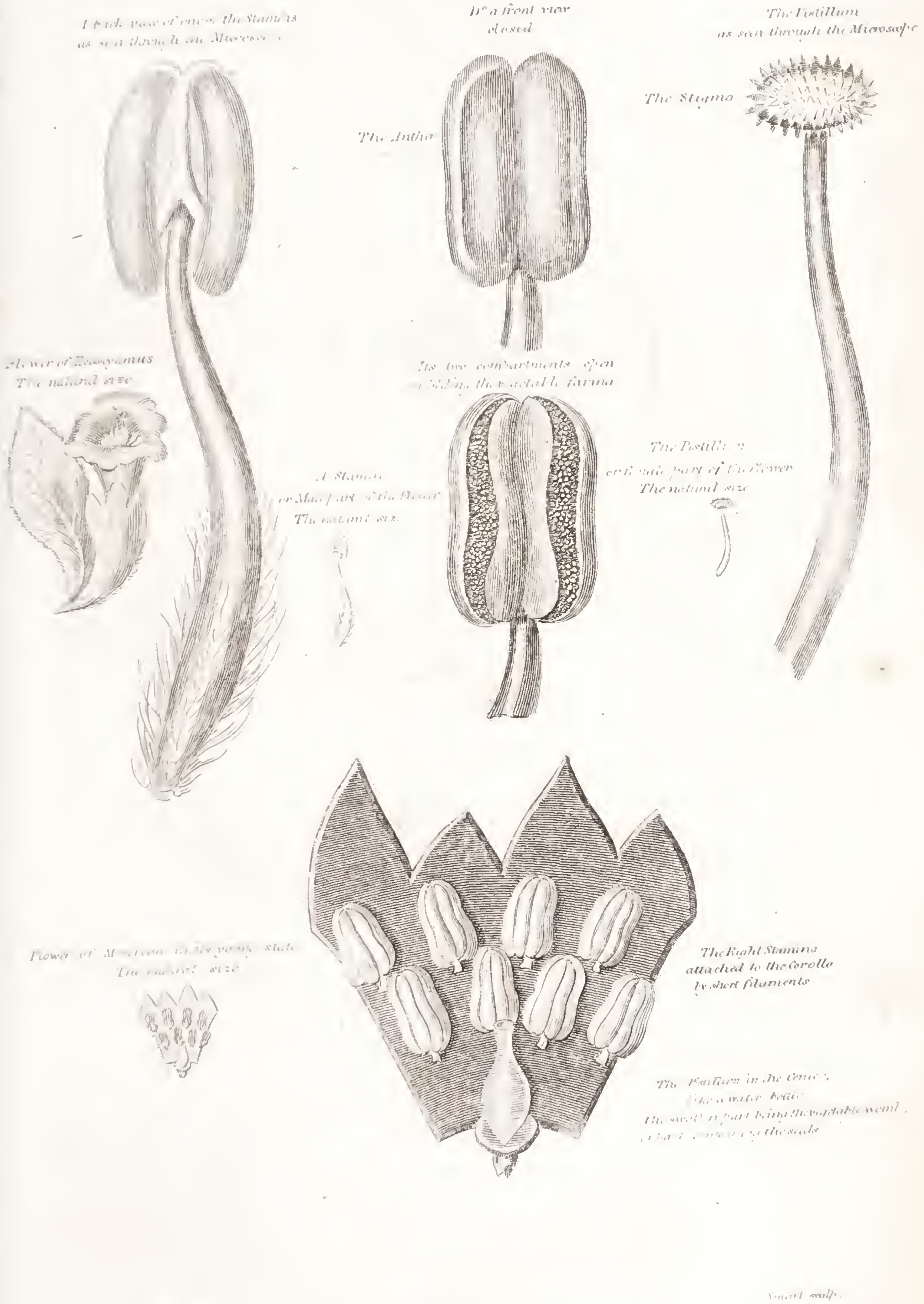
London, Published by Dr. Thornton, Octr. 1. 1811

Claſs 8.

OCTANDRIA

Eight Stamina

A Plate from Grew's Anatomy of Plants
published in 1682.


A back view of one of the Stamens
as seen through the Microscope
D^o a front view
closed
The Anther
The Pistillum
as seen through the Microscope
The Stigma
Flower of Hyoscyamus
The natural size
Its two compartments open
yielding the vegetable farina
A Stamen
or Male part of the Flower
The natural size
The Pistillum
or female part of the Flower
The natural size
Flower of Mezereon in the young state
The natural size
The Eight Stamina
attached to the Corolla
by short filaments
The Pistillum in the Centre,
like a water bottle
the swollen part being the vegetable womb,
or part containing the seeds

Grew del.

Smart sculp.

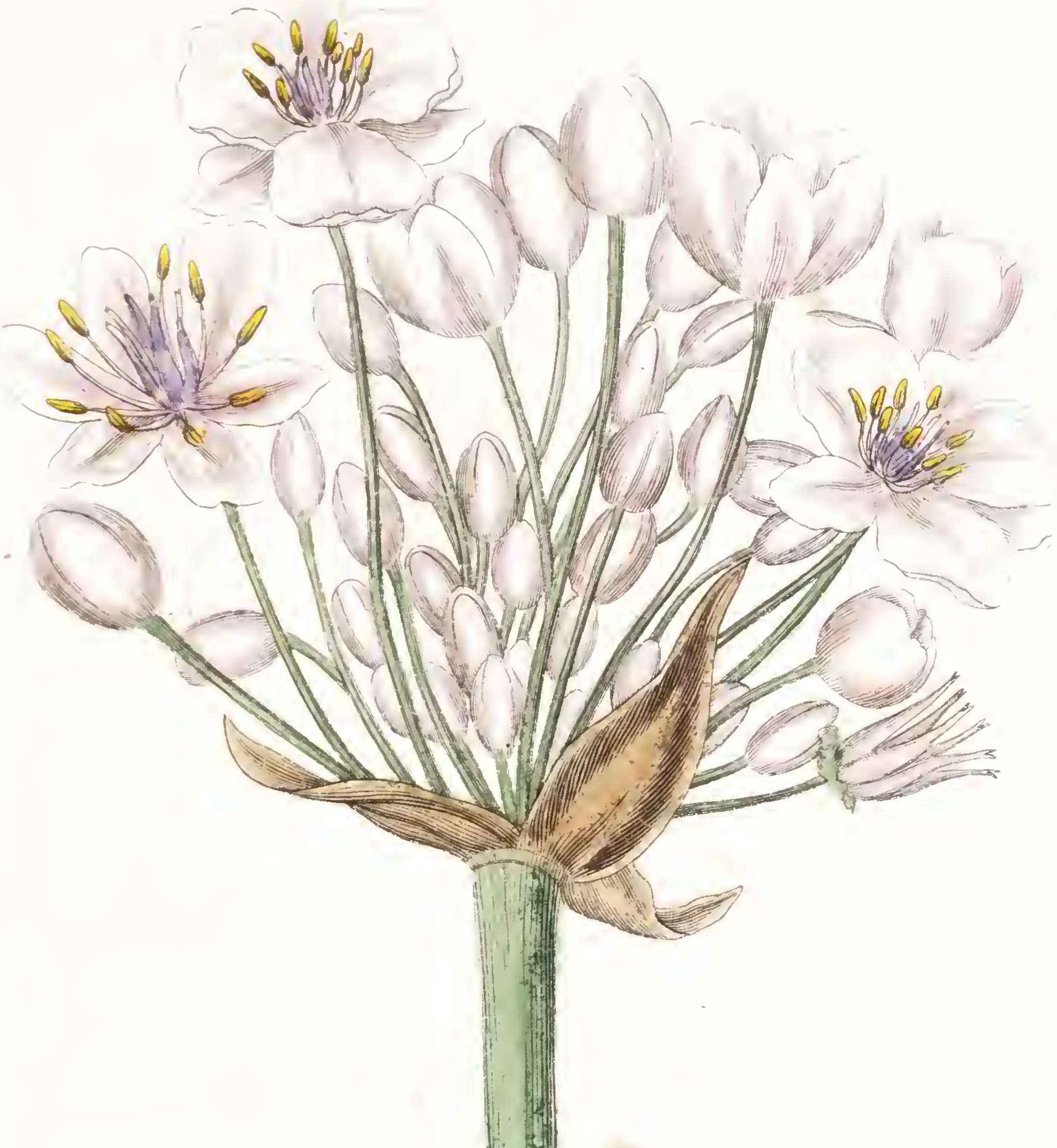
London Published [illegible] July [illegible].

Claſs 9.

ENNEANDRIA.

Nine Stamina.

Butomus umbellatus, or Flowering Rush.



9. Stamina

6. Pistilla

London Published for D.r Thornton, Jan.y 1 1812

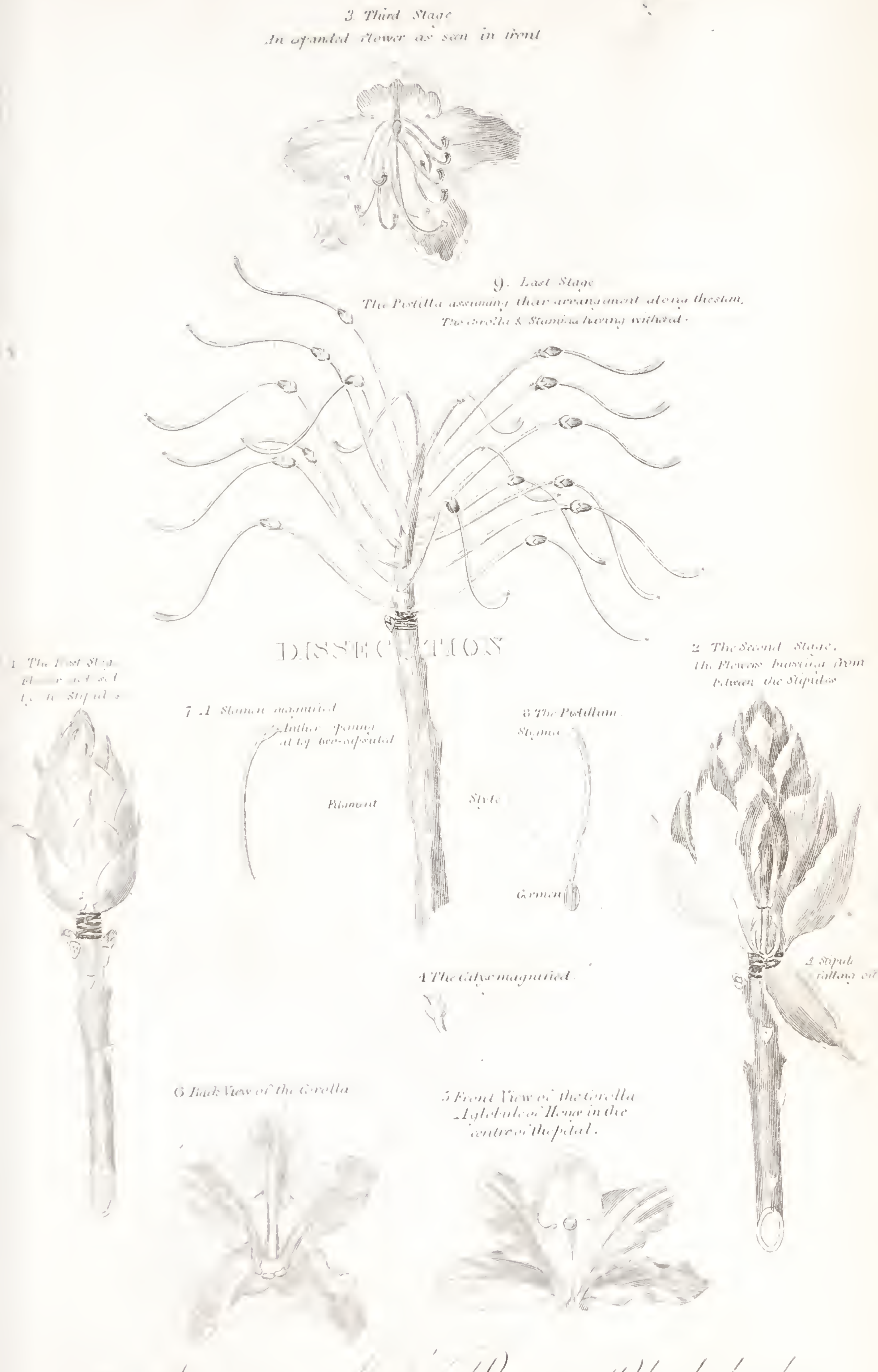
Henderson del

Warner sculp

Claſs 10.

DECANDRIA.

Ten Stamina



3. Third Stage
An expanded Flower as seen in front

9. Last Stage
The Pistilla assuming their arrangement along the stem,
The Corolla & Stamina having withered.

1 The First Stage
Flower enclosed
by the Stipules

2 The Second Stage,
The Flowers bursting from
between the Stipules

7 A Stamen magnified

8 The Pistillum.

4 The Calyx magnified.

6 Back View of the Corolla

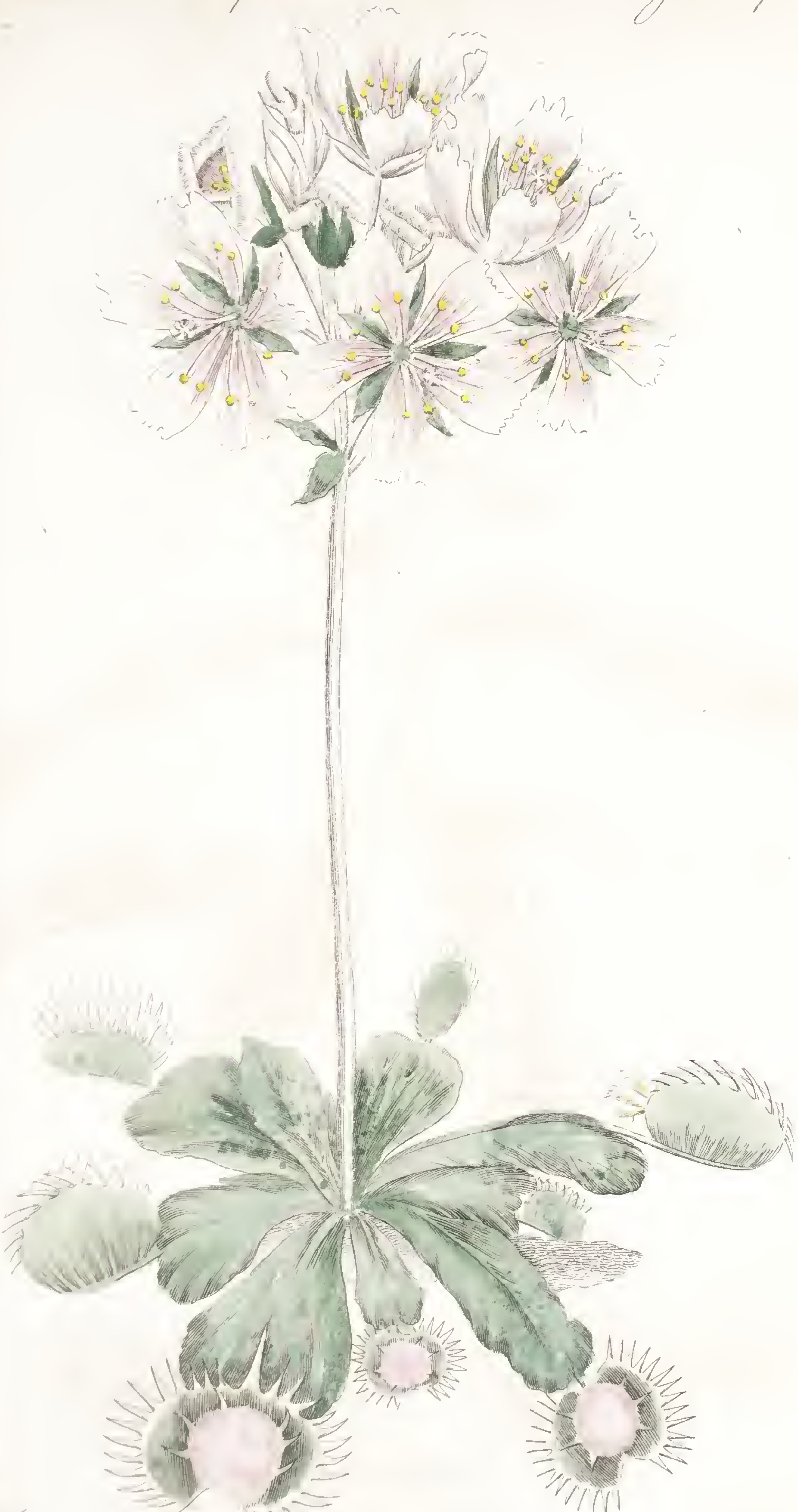
5 Front View of the Corolla
A globule of Honey in the
centre of the petal.

Anatomy of the Pontic Rhododendron

[illegible] del.

Smart sculp

Dionæa Muscipular, or Venus's Fly-trap.

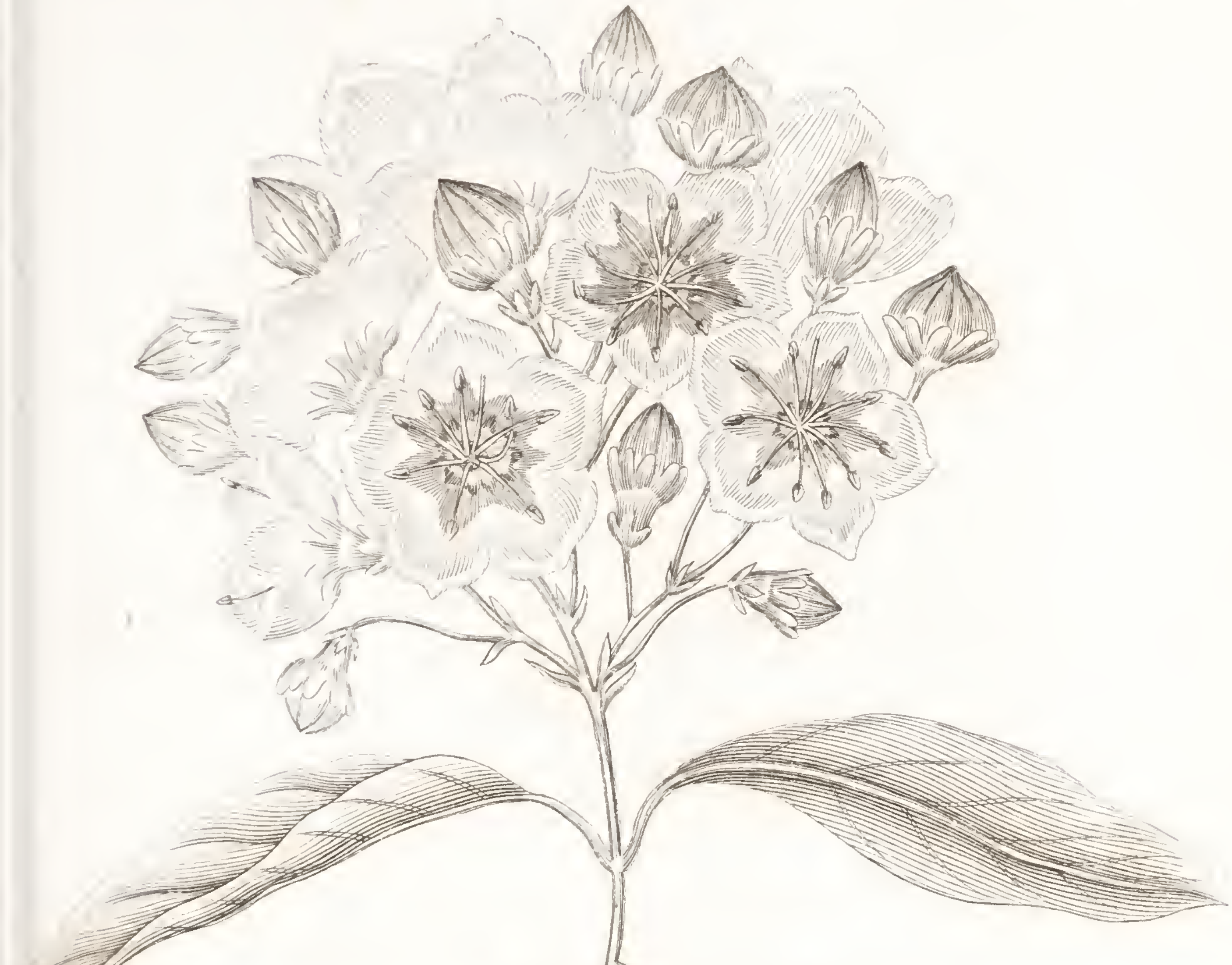


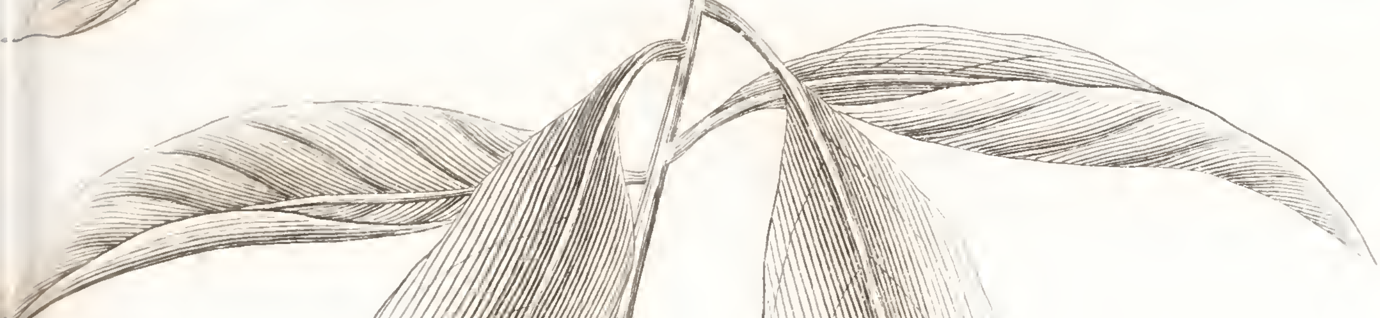
[illegible] del.

Eves sculp.

London Published for Dr. Thornton, Jany. 1. 1812.

almia latifolia, or Broad-leav'd Kalmia





The several stages of the Kalmia.

een del. *Ever sculp.*

London. Published for Dr. Thornton Jan.y 1st 1811.

Claſs 11.

DODECANDRIA.

Twelve Stamina

Plate wanting

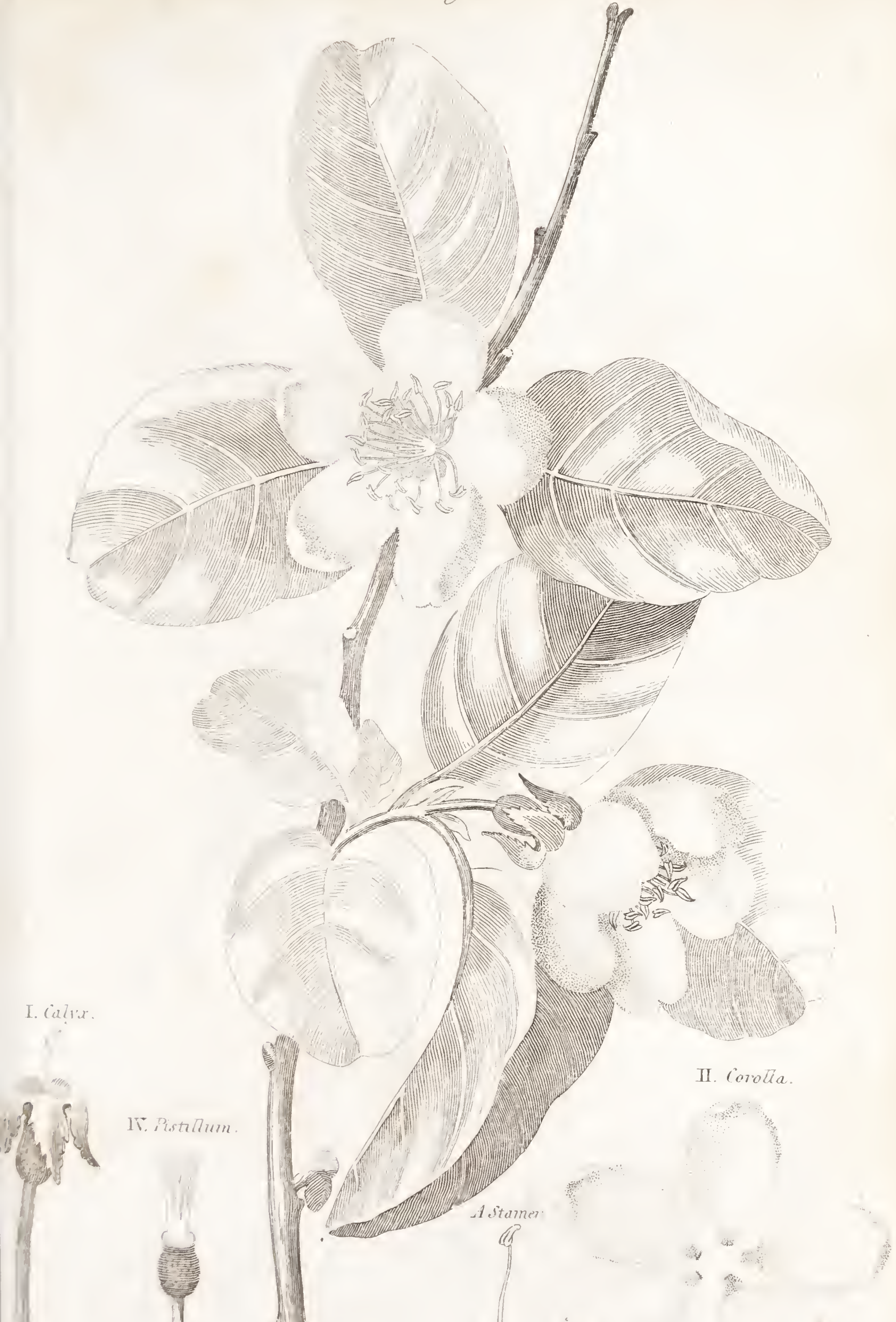
Claſs 12.

ISOCANDRIA.

Twenty or more Stamina

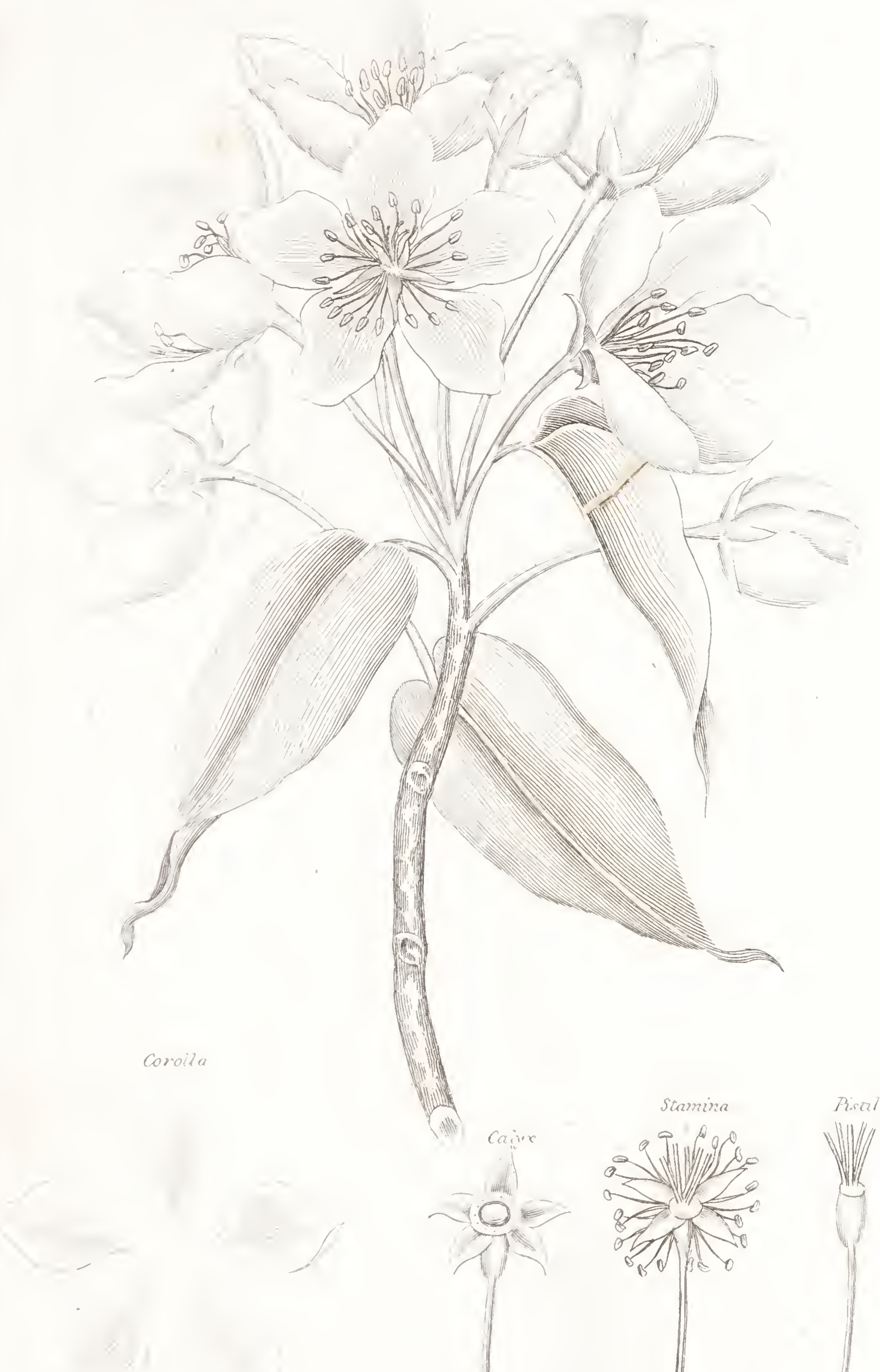
inserted on the Calyx or Corolla.

Pear Bloſsom.


I. Calyx.
IV. Pistillum.
A Stamen
II. Corolla.

London, Publiſhed by Dr. Thornton, Jany. 1. 1812.

Pyrus Malus, or Pear Blossom.

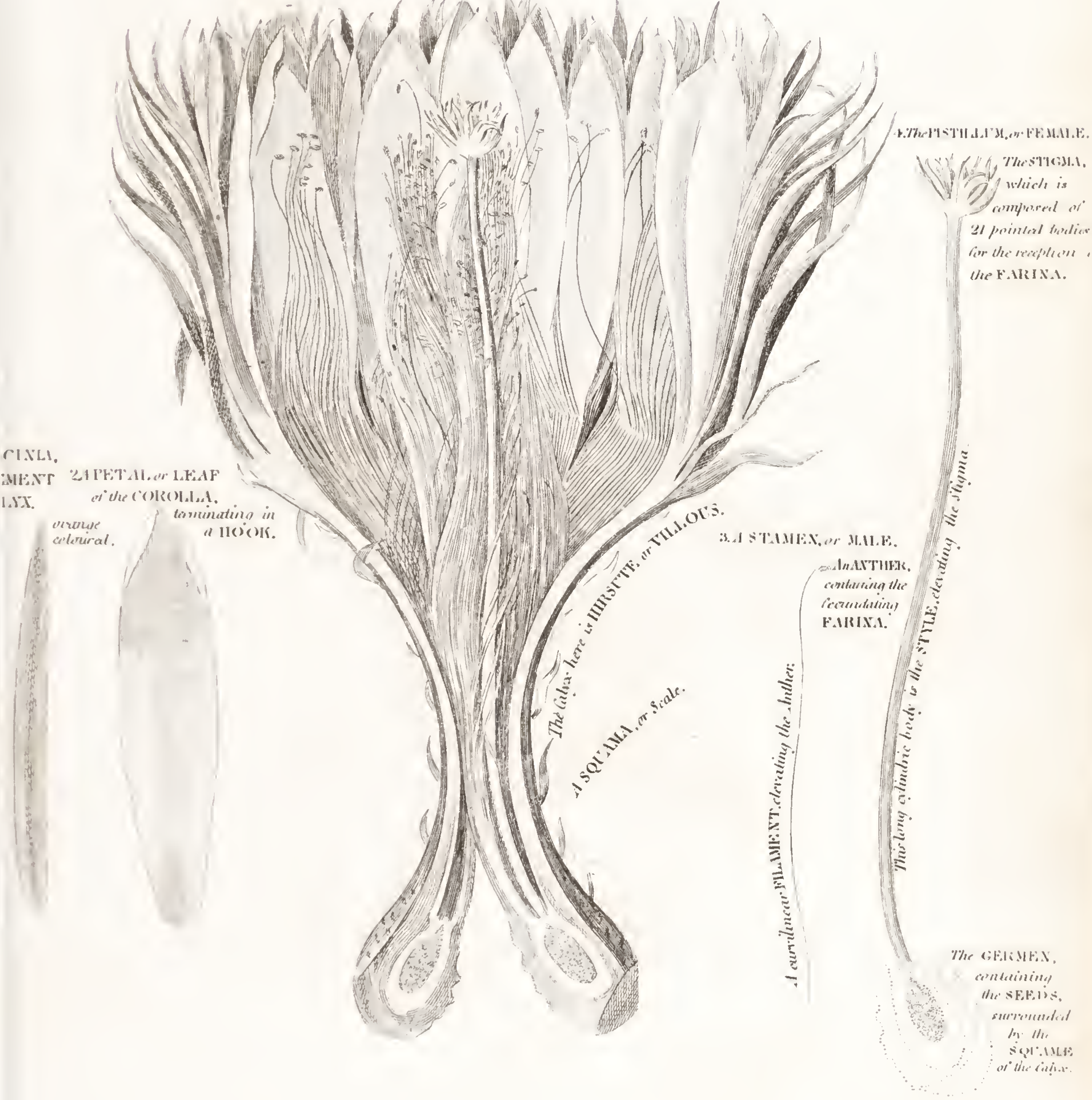


London. Published for Dr. Thornton Jany. 1. 1812.

Henderson del.

Ever sculp.

Anatomy of the Night blowing Cereus, or Cactus Grandiflora of Linnæus.


ACINIA,
MENT
LYX.
orange coloured.
2. A PETAL, or LEAF of the COROLLA, terminating in a HOOK.
The Calyx here is HIRSUTE, or VILLOUS.
A SQUAMA, or Scale.
3. A STAMEN, or MALE.
An ANTHER, containing the fecundating FARINA.
A curvilinear FILAMENT, elevating the Anther.
4. The PISTILLUM, or FEMALE.
The STIGMA, which is composed of 21 pointed bodies for the reception of the FARINA.
This long cylindric body is the STYLE, elevating the Stigma.
The GERMEN, containing the SEEDS, surrounded by the SQUAMÆ of the Calyx.

agle pinx

Smart sculp.

London Published by Dr. Thornton Sepr. 2. 1811.

Claſs 13.

POLYANDRIA.

Many Stamina

inserted on the Receptacle.

[illegible]

Kate Harding

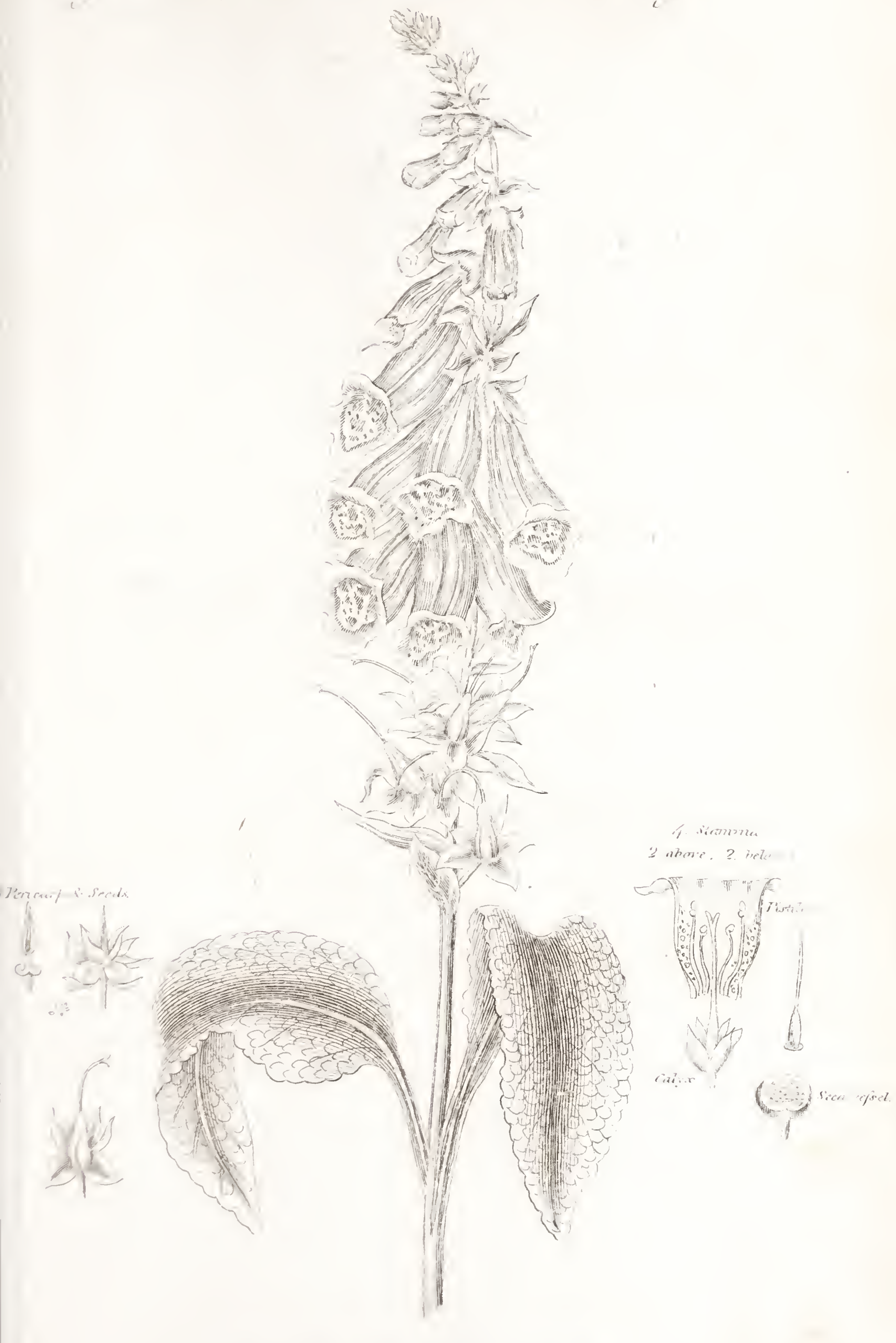
Class 14.

DIDYNAMIA.

Four Stamina

two long, two short

Digitalis purpurea, or Purple Foxglove.



London Published for Dr Thornton Jany 1st 1812.

[illegible] del.

Ives sculp.

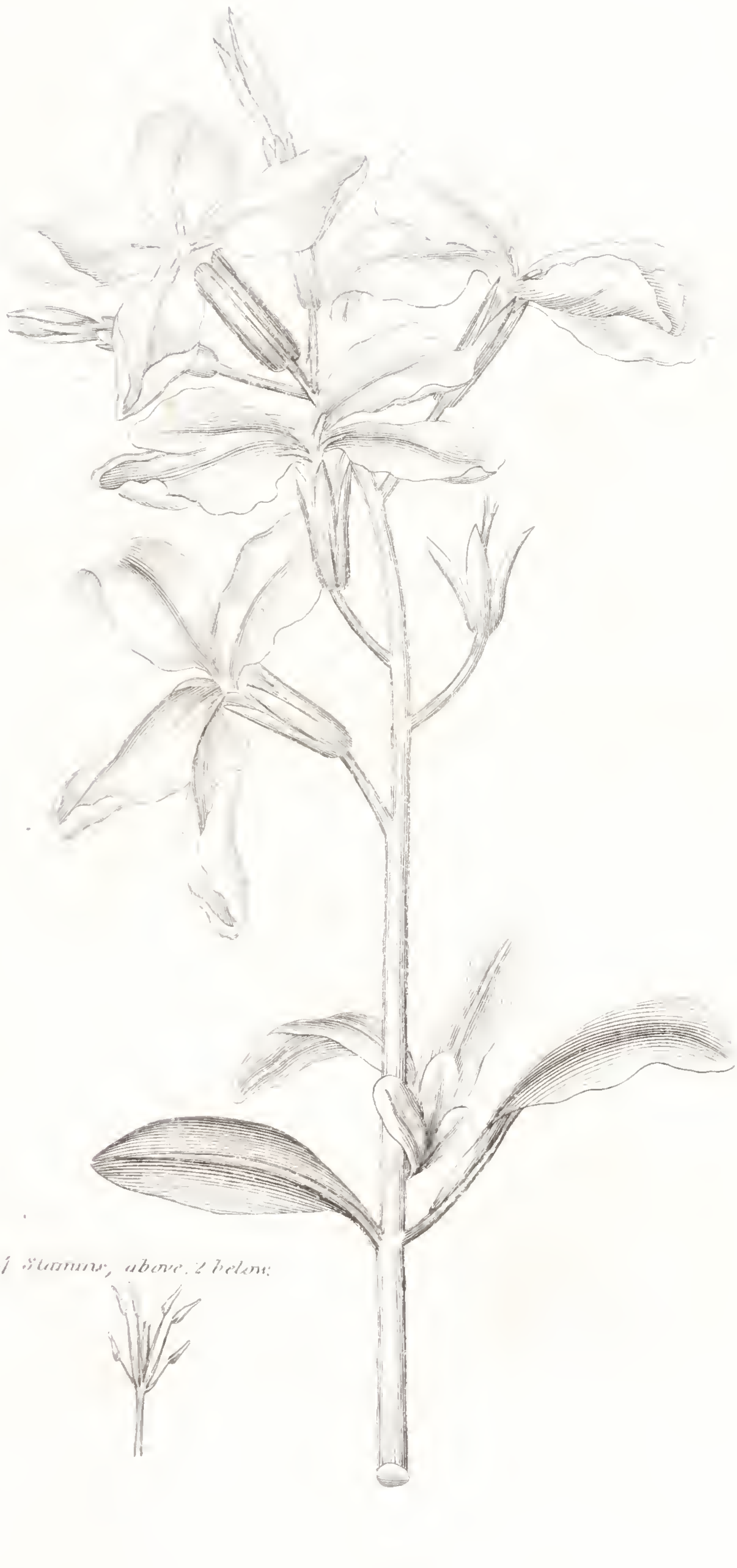
Claſs 15

TETRADYNAMIA.

Six Stamina

four long, ~~four~~ 2 short

Cheiranthus incanus, or Brompton Stock.

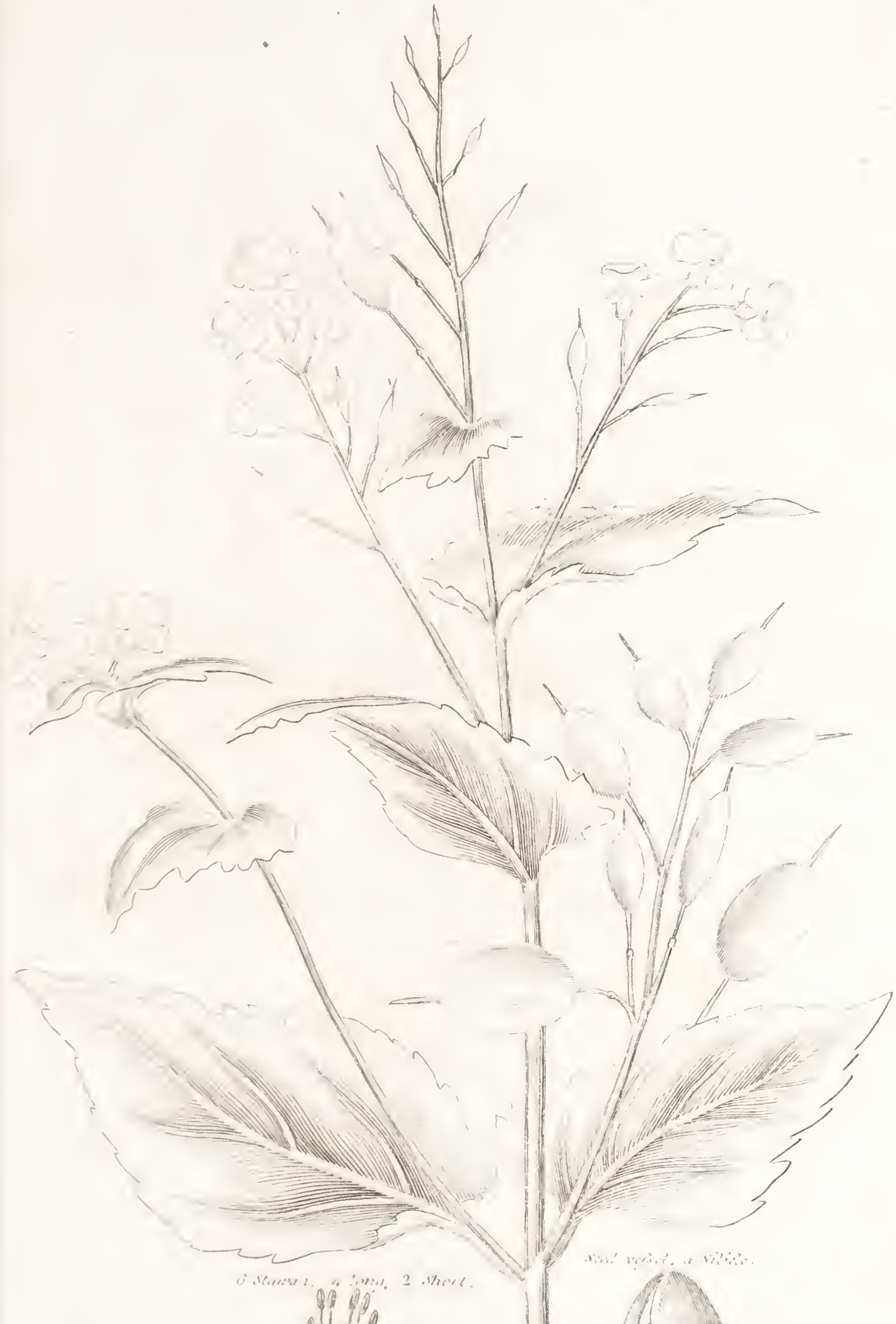

4 Stamens, above. 2 below.

Henderson del.

Eyes sculp.

London Published for Dr. Thornton Jan.y 1st 1812.

Lunaria, or Honesty.


6 Stamens, 4 long, 2 short.
Seed vessel, a Silicle.

Hudson del.

Eves sculp

London, Published by Dr. Thornton Jan.y 1st 1812.

Claſs 16

MONADELPHIA

Stamina united in their filaments,

forming one body

Claſs 17.

DIADELPHIA.

Stamina united in their filaments,

forming two bodies.

Plate wanting

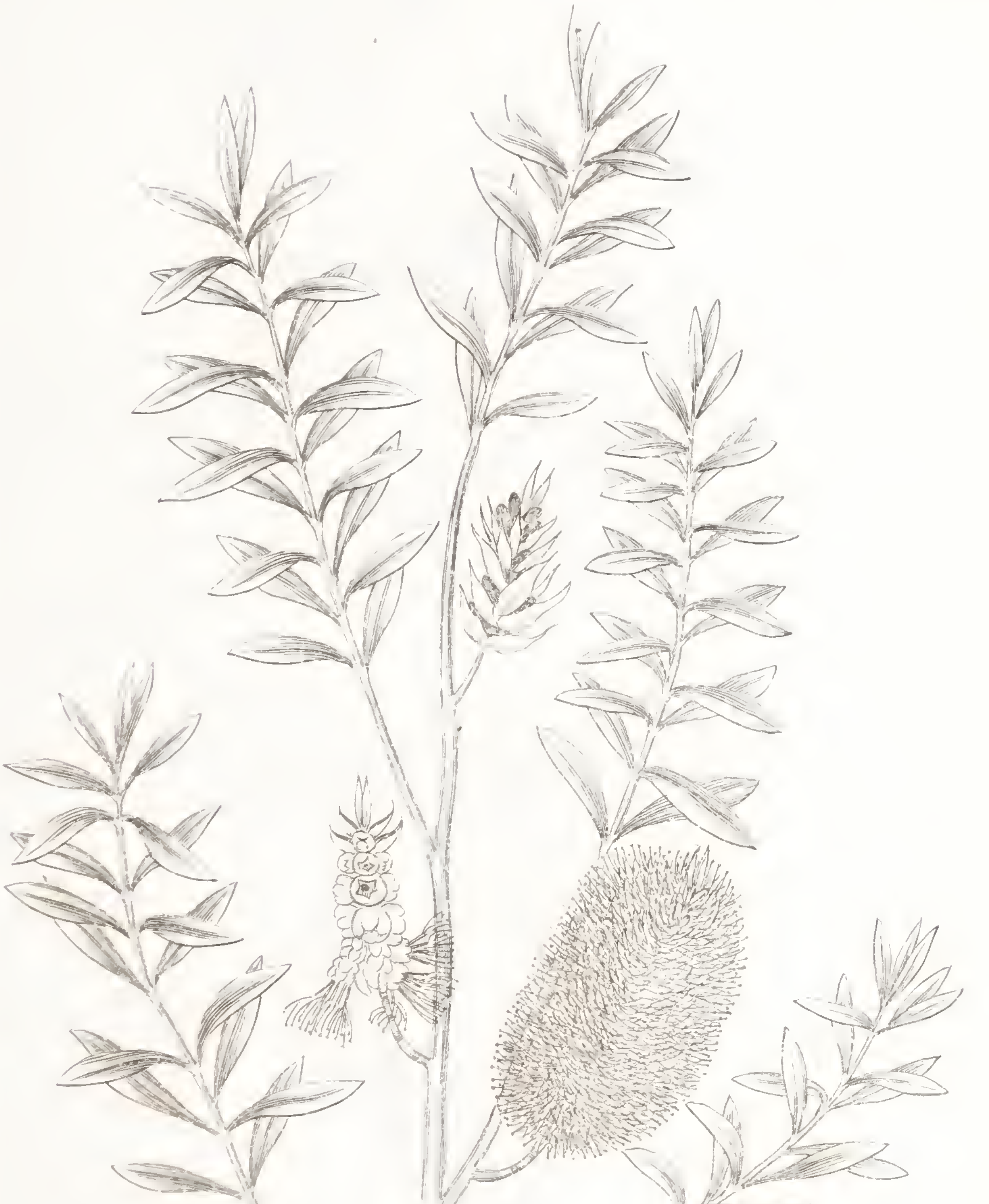
Claſs 18.

POLYADELPHIA.

Stamina united in their filaments,

forming three or more bodies.

Melaleuca Ericifolia, or Heath-leaved Melaleuca.

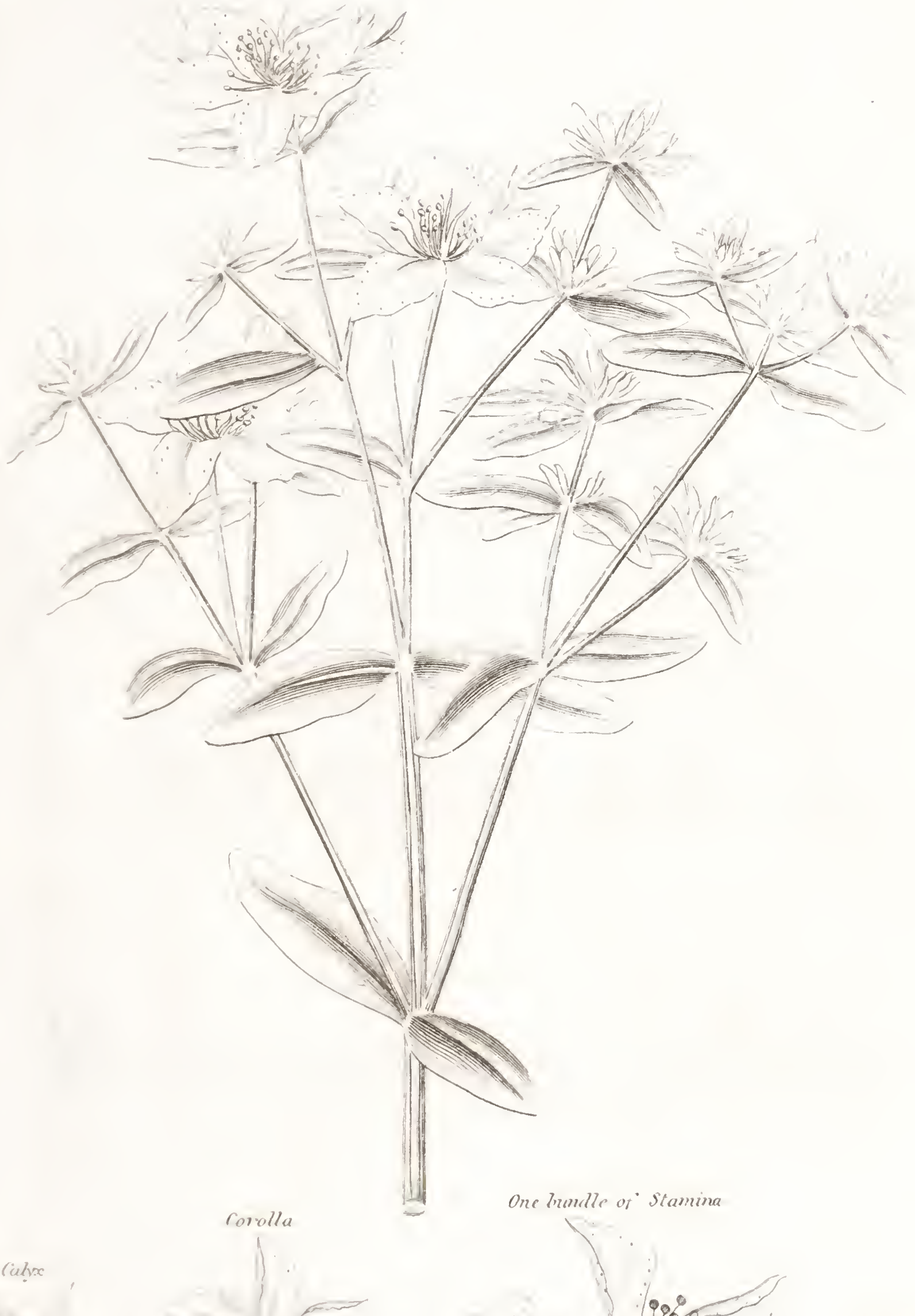


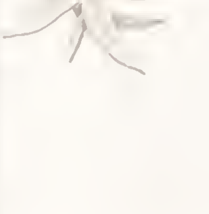
Irawn del.

Evans sculp.

London, Published for Dr. Thornton, Jan.y 1.1812.

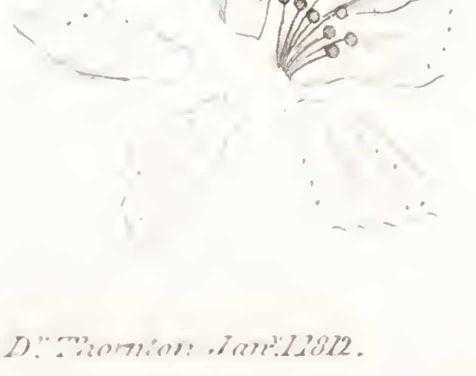
Hypericum perforatum, perforated St John's-wort





Calyx

Corolla



One bundle of Stamina

Pistillu

London Published for D.r Thornton Jan.y 1.1812.

Henderson del.

Ives

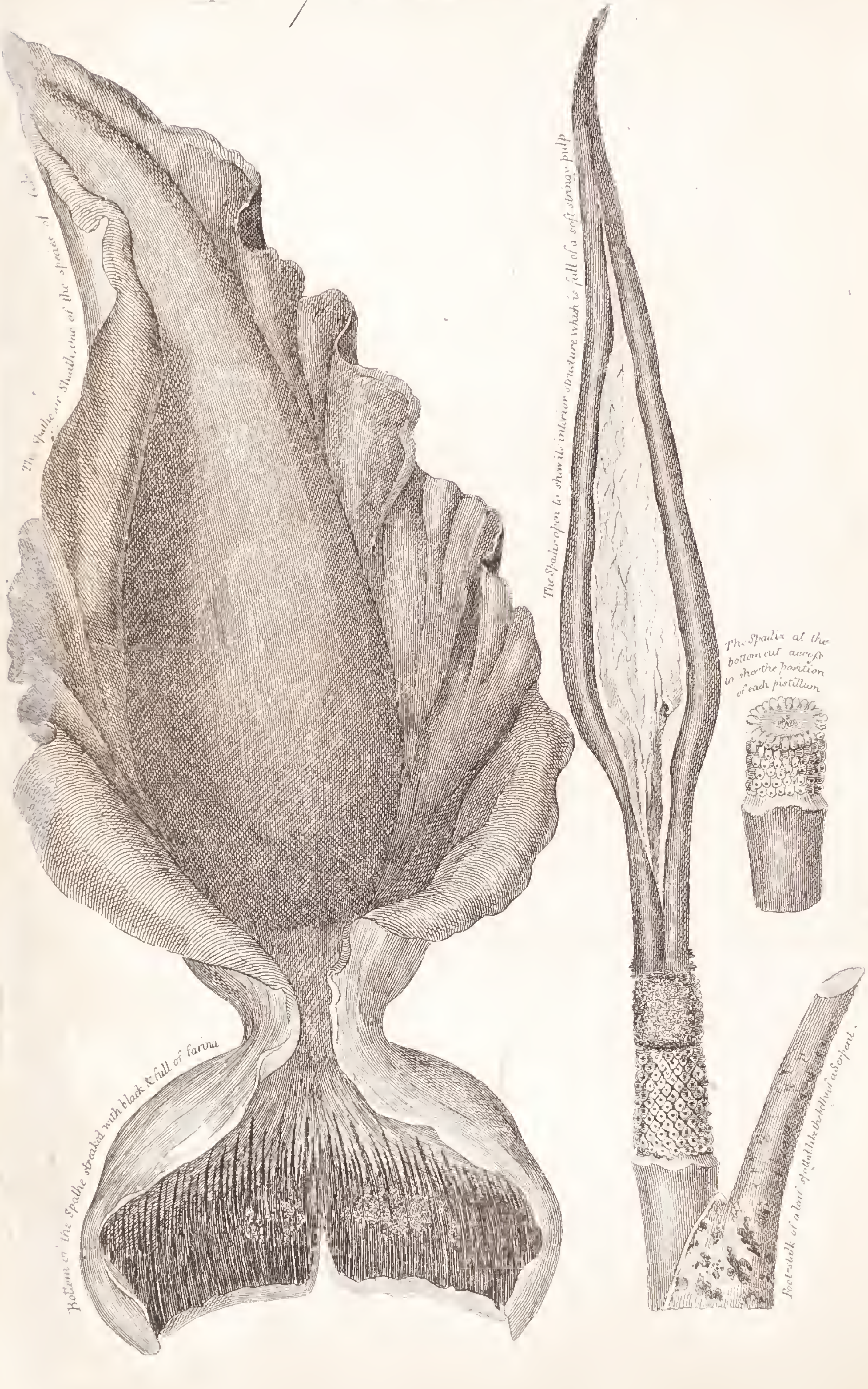
Claſs 19.

GYNANDRIA.

Stamina growing out of the Pistillum.

Girtin sc.

Anatomy of the Dragon Arum. A poisonous Plant.


The Spathe or Sheath, one of the species of
The Spadix open to show its interior structure which is full of a soft stringy pulp
The Spadix at the bottom cut across to show the position of each pistillum
Bottom of the Spathe streaked with black & full of farina
Foot-stalk of a leaf spotted like the belly of a Serpent.

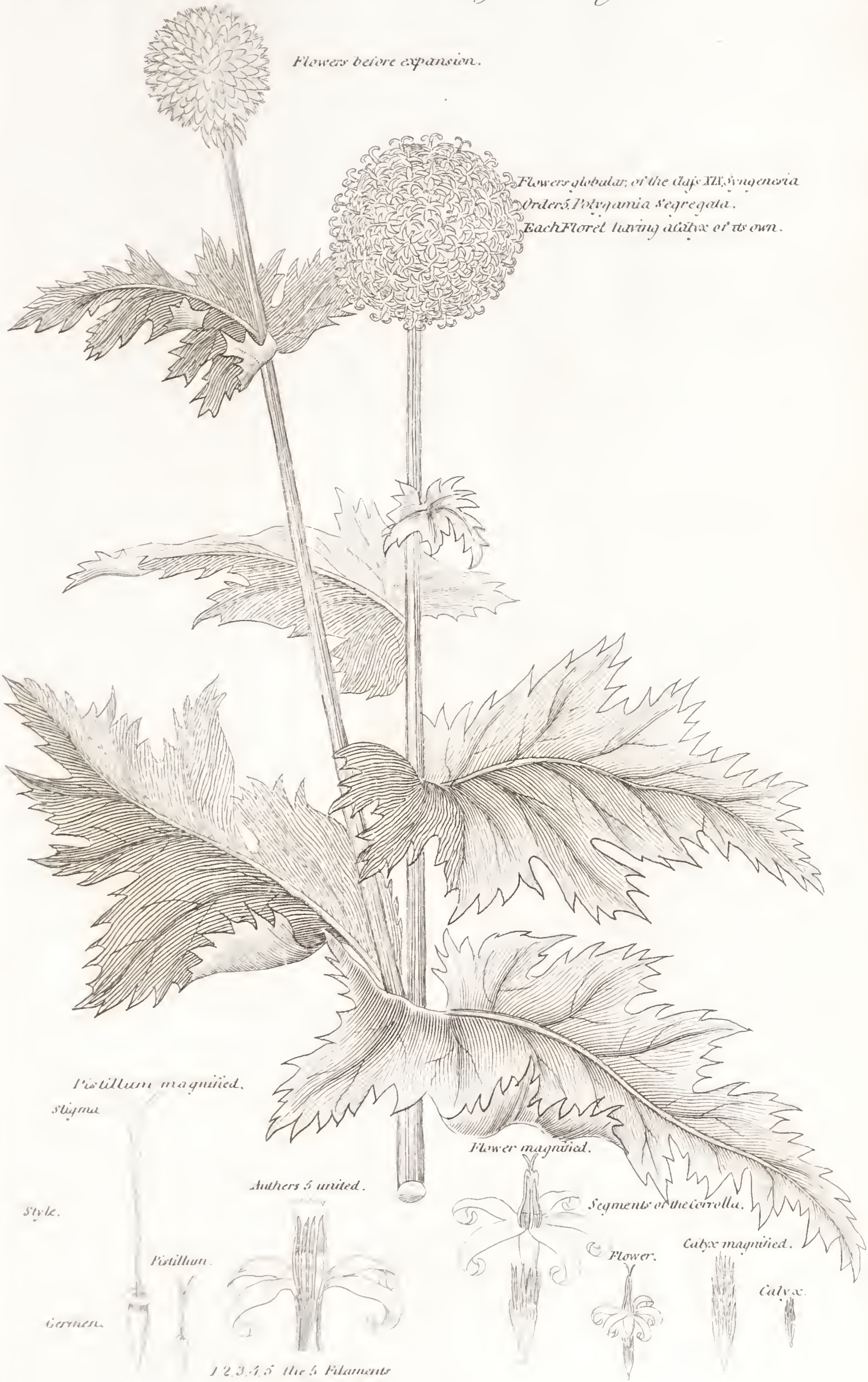
London Published by Dr. Thornton Aug.st 1811

Claſs 20.

SYNGENESIA.

Stamina having five united Anthers.

Echinops spærocephalus or Great Globe Thistle


Flowers before expansion.
Flowers globular, of the class XIX, Syngenesia
Order 5. Polygamia Segregata.
Each Floret having a calyx of its own.
Pistillum magnified.
Stigma
Style.
Pistillum.
Germen.
Anthers 5 united.
1 2.3.4.5 the 5 Filaments
inserted into the Corrolla.
Flower magnified.
Segments of the Corrolla.
Flower.
Calyx magnified.
Calyx.

London. Published by Dr. Thornton Octr. 1.1811.

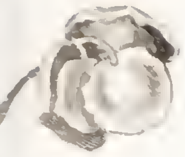
Claſs 21.

MONOECIA.

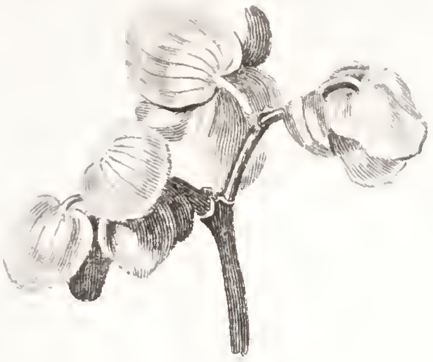
Staminiferous and pistilliferous Flowers

on the same Plant.

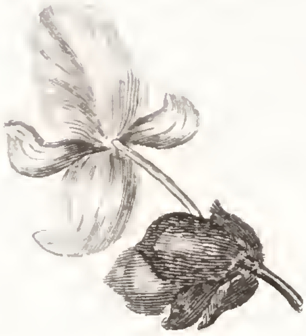
THE MALE FLOWER.

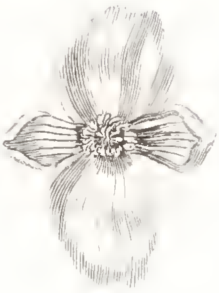

[illegible] ued by
[illegible] Sheath

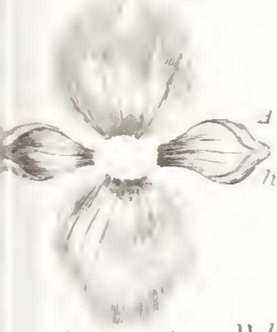
2. This Sheath exposed.


3. Male flowers in clusters before expansion

1 The first State or
the petals closed


5. Back View of a male flower.


6 Front View of a male flower

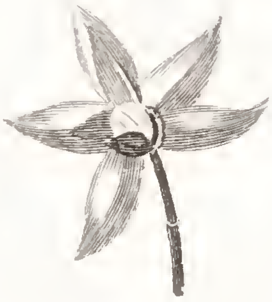

our Petals of the male flower separate

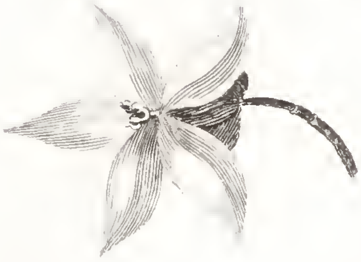
8. The numerous Stamina in the
center of the male flower

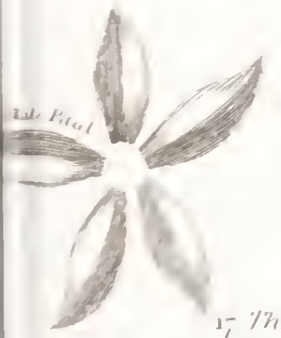
9. A Stamen magnified

10. Th[illegible]

THE FEMALE FLOWER.

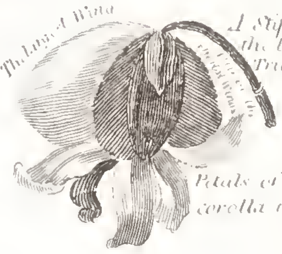

11 Back View of a female flower


12 Front View of a female flower

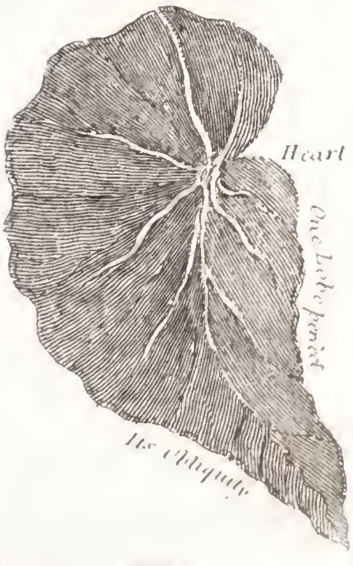

e Petals of the female flower separate.

14 A Tricuspid Pistillum, in the
center of the female flower.
the three styles coalesced
at their base.

[illegible] separate
Stigma two headed, forked
Style very short


16. A Three winged Seed-Vessel

17 The Stalk supporting the Female
Flowers dichotomous or forked

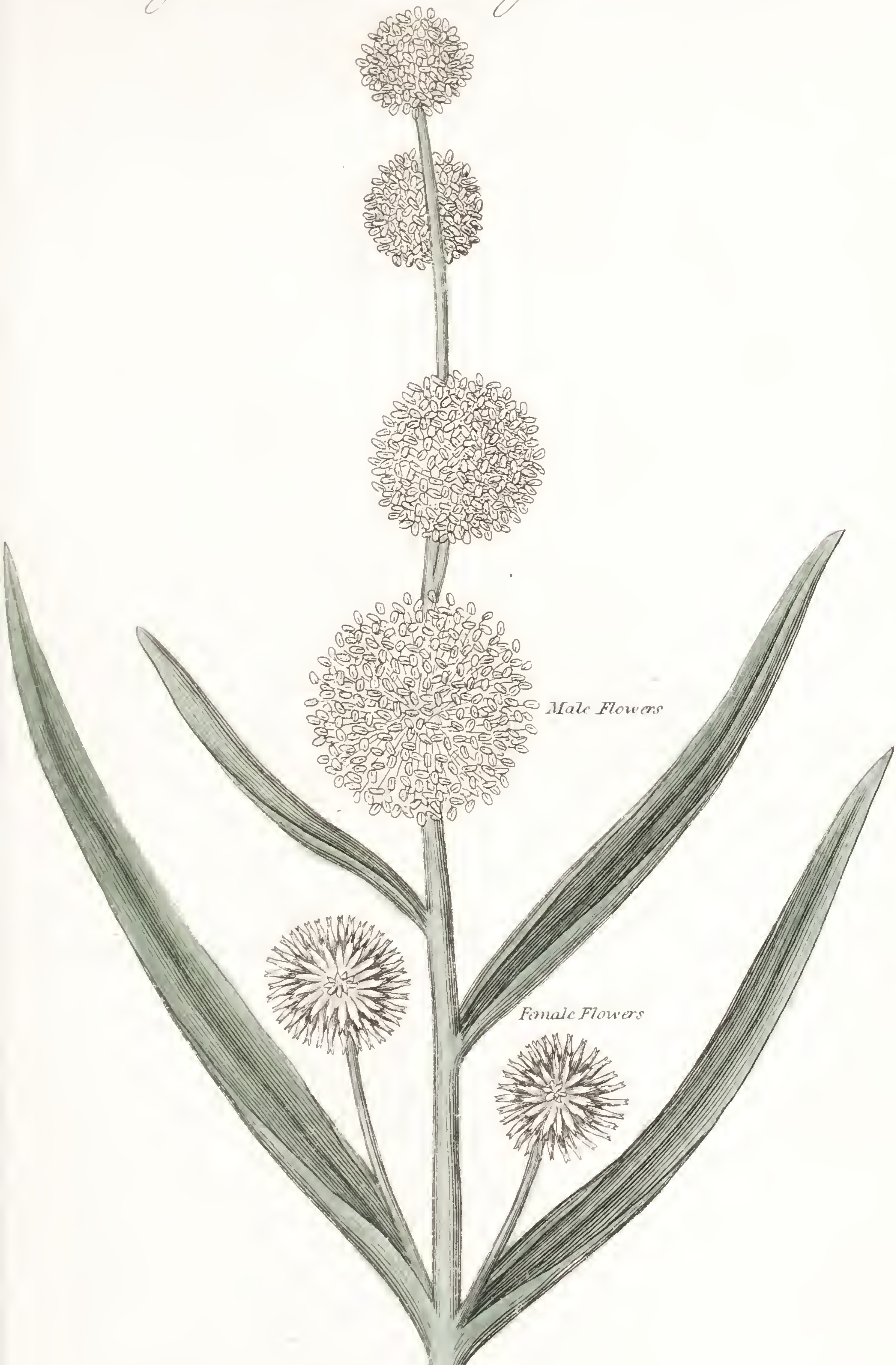

18 A leaf

Anatomy of the Begonia.

London, Published by Dr Thornton July 1811.

Smart sculp

Sparganium simplex; leſs Bur-reed.



London. Published for Dr. Thornton Jany. 1. 1812.

Henderson del.

Warner sculp.

Claſs 22.

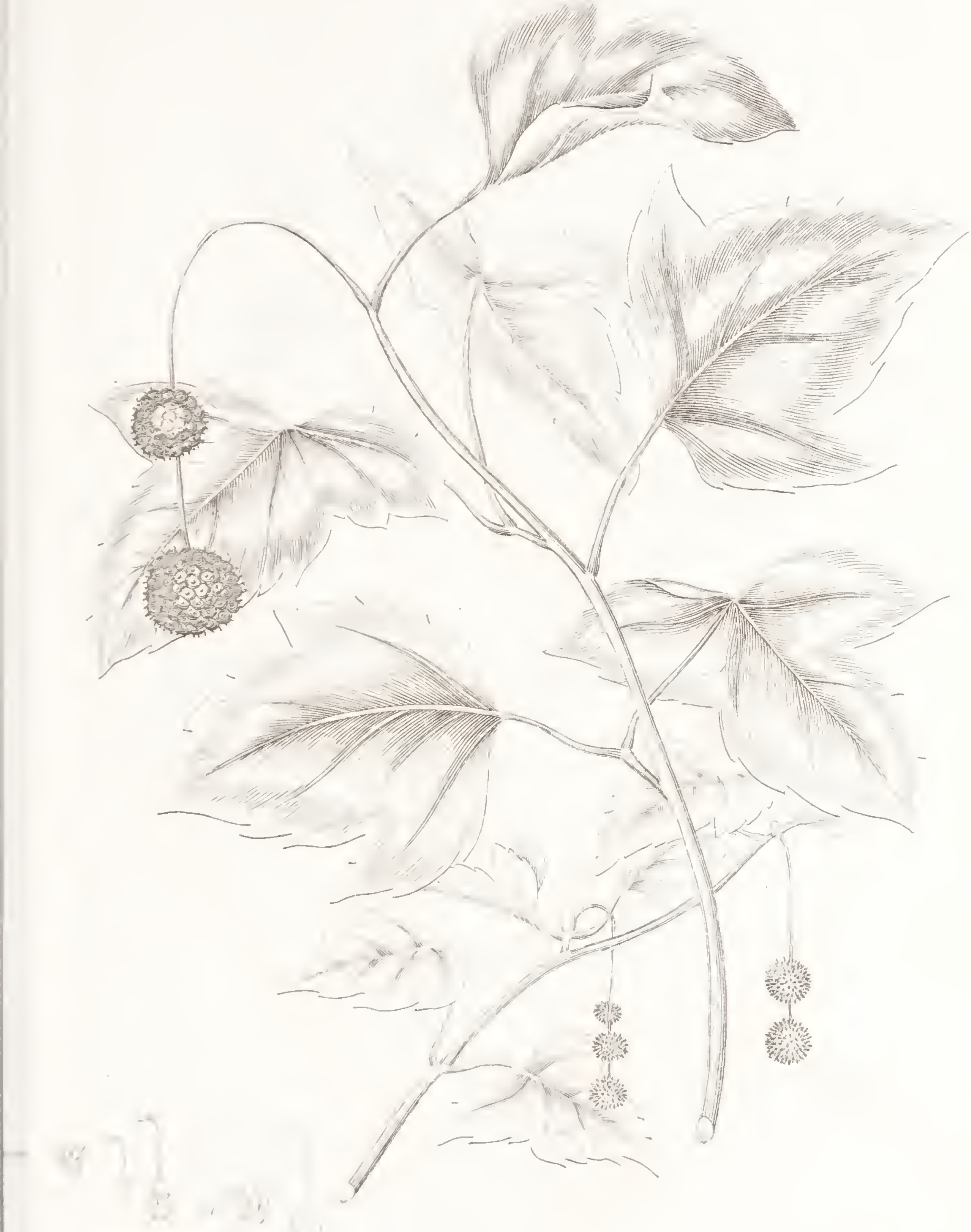
DIOECIA.

Staminiferous and Pistilliferous Flowers

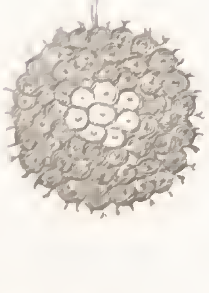
on different Plants.

Rhoda [illegible]

Platanus Occidentalis, or Lobe-leaved Plane-tree.



Female Flowers



Ament Globular.

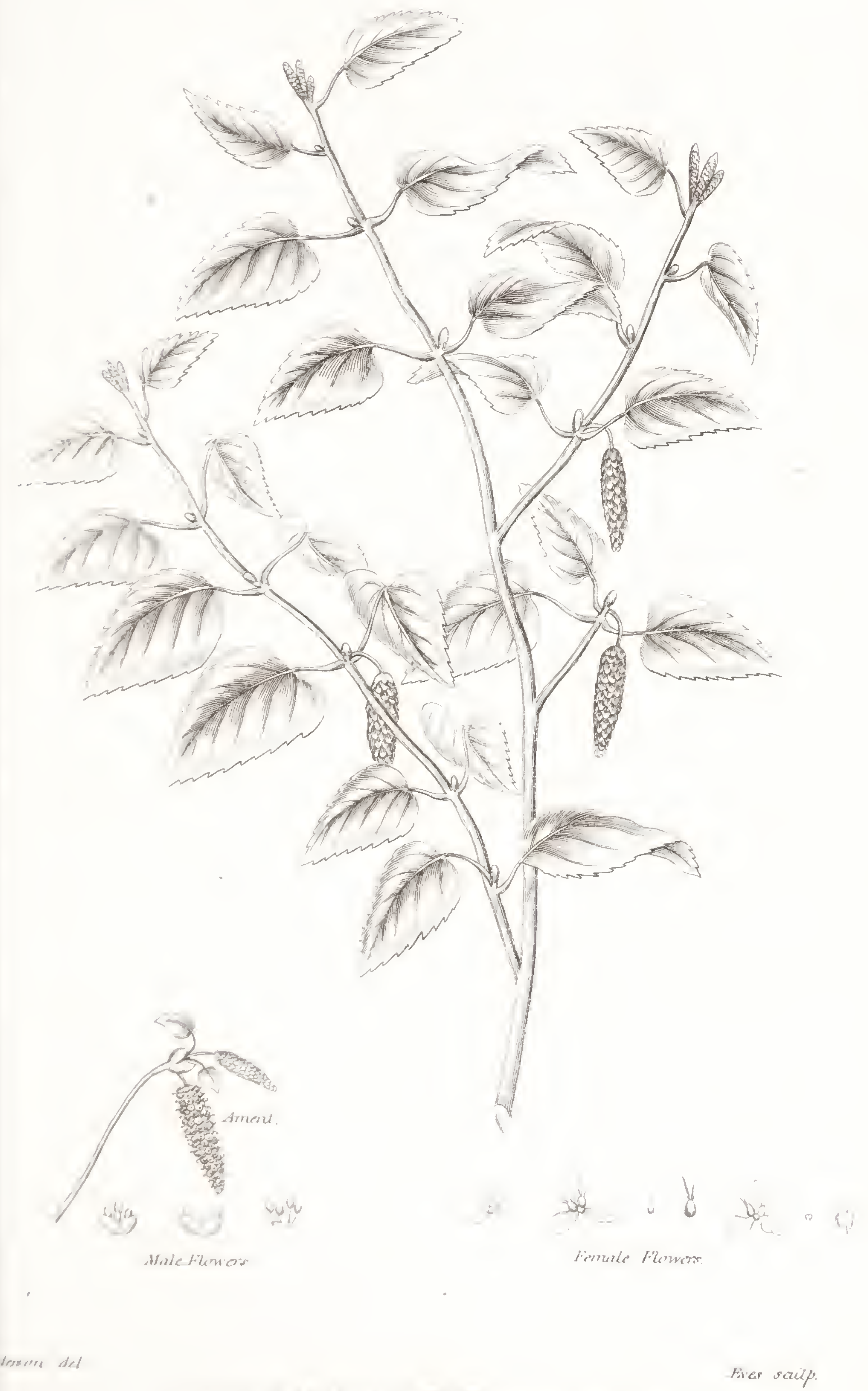
Male Flowers

Henderson del

Eves sculp

London, Published for Dr. Thornton, Jany. 1st 1812.

Beluta Alba; or Birch Tree.



ndason del

Eves sculp.

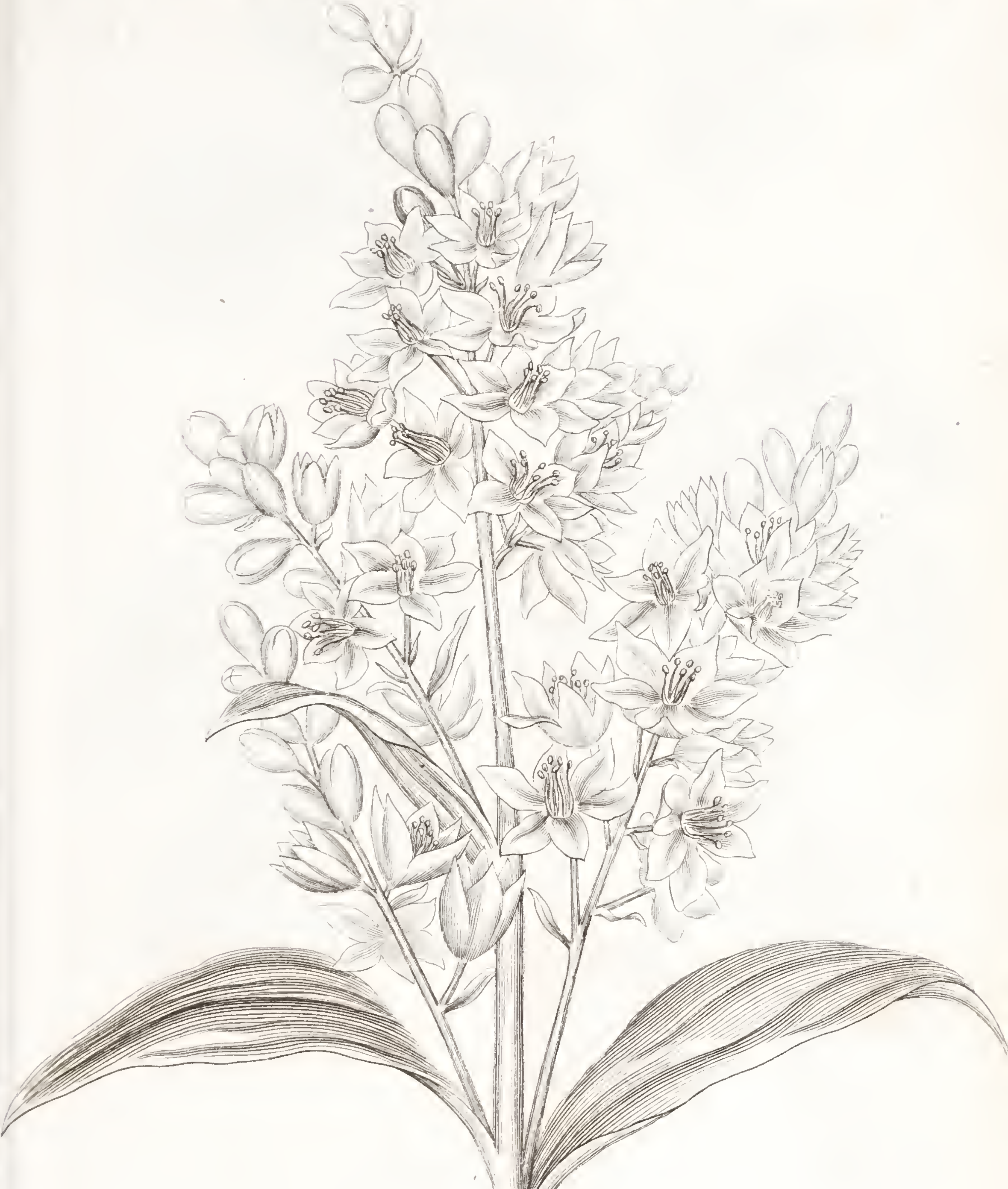
London, Published for Dr. Thornton Jan.1.1812.

Claſs 23.

POLYGAMIA.

Bisexual Flowers with Staminiferous or Pistilliferous Flowers.

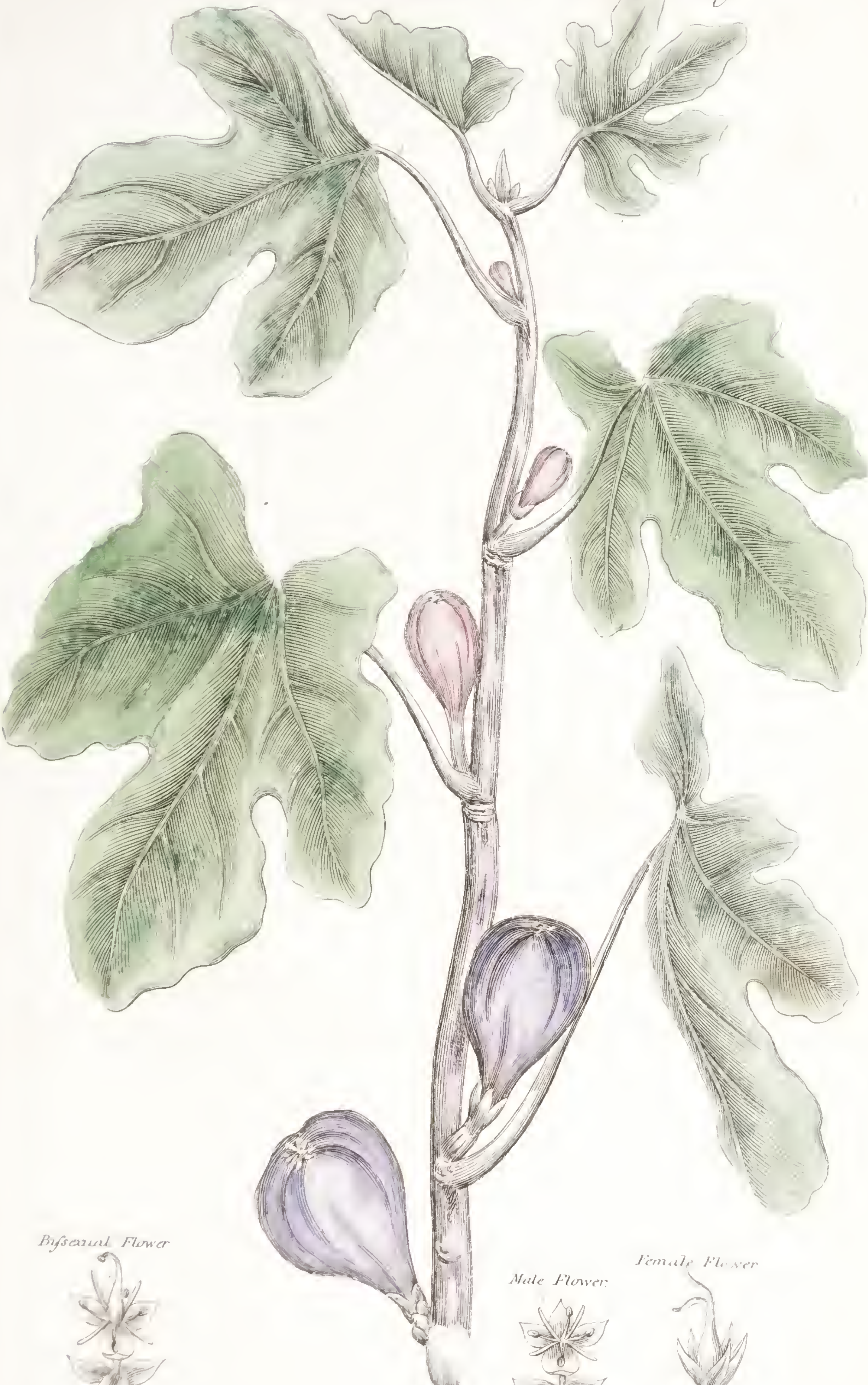
Veratrum album; or White Hellebore.



Henderson del.
Eves sculp.

London. Published for Dr. Thornton Jan.y 1.1812.

Ficus Carica, or Common Fig.



Henderson del. Ever sculp.

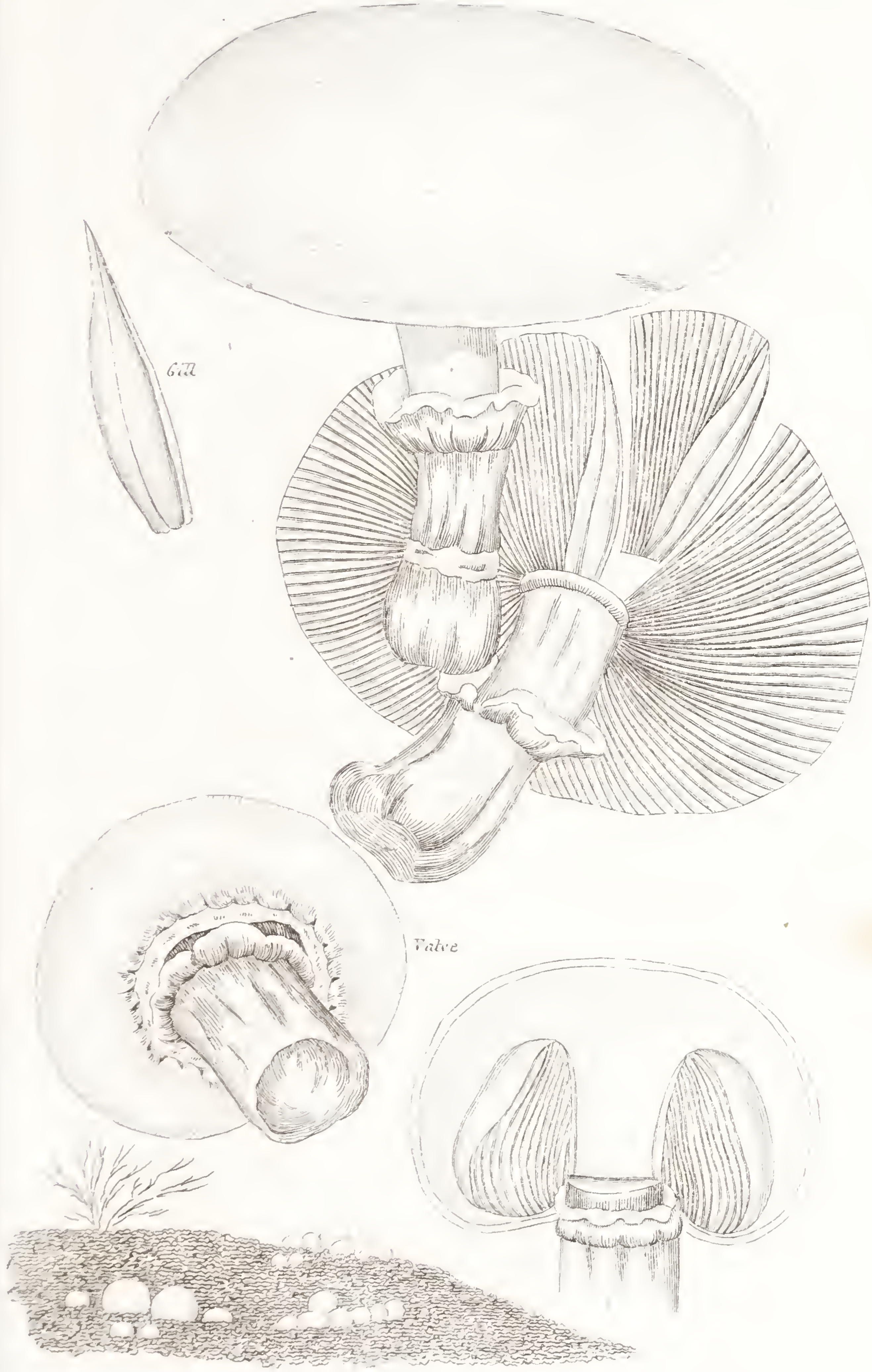
London, Published for Dr. Thornton Jany. 1. 1812.

Claſs 24.

CRYPTOGAMIA.

Stamina & Pistilla invisible.

garicus Campestris, or Common Mushroom.



Henderson del.

Warner sculp.

London Published for Dr. Thornton, Jany. 1.1812.

ORDERS OF THE SEXUAL SYSTEM.

TION I. The Orders *of the following 13 Claſses* 1 Monandria, 2 Diandria 3 Triándria, 4 Tetrándria, 5 Pentándria, 6 Hexá
tándria, 8 Octándria, 9 Enneándria, 10 Decándria, 11 Dodecándria 12 Icosándria, 13 Polyándria, *are taken from the numb*
or Pistilla, and terminate in Gynia, *as the Claſses did in* Andria, *with the Greek Numerals preceding: thus,*

Orders

1 Monógynia, …… · Explanation
2 Dígynia …… *1 Pistillum.*
3 Trígynia, …… *2 Pistilla.*
4 Tetrágynia …… *3 Pistilla.*
5 Pentágynia, …… *4 Pistilla.*
6 Hexágynia, …… *5 Pistilla.*
7 Heptágynia, …… *6 Pistilla.*
8 Octógynia, …… *7 Pistilla.*
9 Enneágynia, …… *8 Pistilla.*
10 Decágynia, …… *9 Pistilla.*
11 Dodecágynia …… *10 Pistilla.*
12 Polýgynia …… *12 Pistilla.*
…… *many Pistilla.*

SECTION II. Claſs 14 Didynámia *has the Orders taken from the Situation of the Seeds.*

Orders

1 Gymnospérmia, …… *Naked Seeds.*
2 Angiospérmia. …… *Covered Seeds (Capsuled.)*

SECTION III. Claſs 15, Tetradynámia, *has its Orders from a difference in the Shape of the Seed-veſsel.*

Orders

1 Siliculósa, …… *Pod a Silicle (a broad Pod.*
2 Siliquósa, …… *Pod a Silique (a long Pod.*

SECTION IV. Claſses 16 Monodélphia, 17 Diadélphia, 18 Polyadélphia, *for* Claſs 19, *vide SECT. V.*
also Claſs 20 Gynándria, *have their Orders taken from the Number of Stamina: thus,*

Orders

1 Pentándria, …… *5 Stamina.*
2 Hexándria, …… *6 Stamina.*
3 Octándria &c. …… *8 St.ª & so on,* 4 Endecándria, 5 Icoſándria, *to*
6 Polyándria, …… *20 or more St.ª as inserted on the Receptacle.*

Note. *For here the Pistilla, Seed, or Seed-veſsel furniſhes no subdivisions, hence the neceſsity of having recourse to the Number alone, & Number with Insertions of the Stamina.*

Claſs 19 Syngeneſia, *has its Orders taken from the Nature of the Flowers & to understand this well it will be neceſsary to shew it by an Analy*

Orders

Compound ……
  Each Floret having No peculiar Calyx
    All the Florets alike …… 1 Polygámia Æquális.
    Florets diversified.
      Bisexual in the Disk Perfect
        Pistil flowers in the Ray, Perfect …… 2 Polygámia Supérflua.
        D.º Imperfect, …… 3 Polygámia Fruſtránea.
      Bisexual in the Disk Imperfect
        D.º Perfect …… 4 Polygámia Neceſsária.
  Each Floret having A peculiar Calyx. …… 5 Polygámia Segregata.
Not compound, but having the Claſsical character …… 6 Monogámia.

SECTION VI. Claſses 21 Monœcia, 22 Diœcia, *take their Orders from the Number & other peculiarities of the Stamina, thus.*

Orders

1 Monándria, …… *1 Stamen.*
2 Diándria, …… *2 St.ª these Claſses subdividing the preceding, to*
3 Gynándria, …… *Stamina arising from the Pistillum.*
4 Syngeneſia, …… *5 Anthers united.*

… as we deſcend with the Claſses, they have the preeminence of those placed above them, & hence what would otherwise have been … Orders with the Claſsical Appellation. This seeming & perplexing incongruity is obviated in our Reformed Sexual System … explanation of which Vide our Introduction to Botany.

SECTION VII. Thus in Claſs 23 Polygamia *we have Orders.*

Orders

1 Monœcia, …… *1 Habitation.*
2 Diœcia …… *2 Habitations.*
3 Triœcia …… *3 Habitations.*

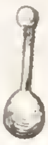
SECTION VIII. Claſs 24 Cryptogamia *has 4 Orders.*

Orders

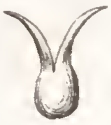
1 Filices …… *Ferns*
2 Musci …… *Moſses.*
3 Algæ, …… *Sea Weeds*
4 Fungi, …… *Funguſes.*

ORDERS OF THE SEXUAL SYSTEM

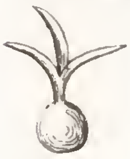
I
Monogynia
1. Pistillum.



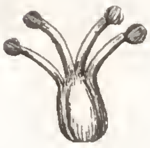
II
Digynia
2. Pistilla.



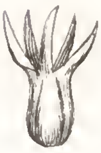
III
Trigynia
3 Pistilla.



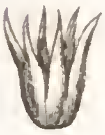
IV
Tetragynia
4. Pistilla.



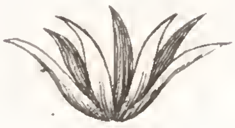
V
Pentagynia
5. Pistilla.



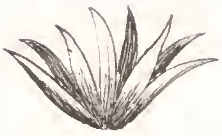
VI
Hexagynia
6. Pistilla.



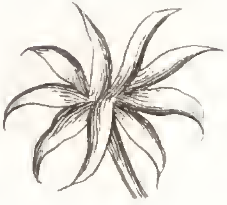
VII
Heptagynia
7. Pistilla.



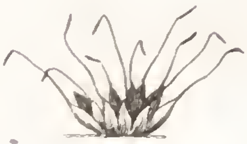
VIII
Octogynia
8. Pistilla.



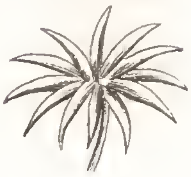
IX
Enneagynia
9. Pistilla.



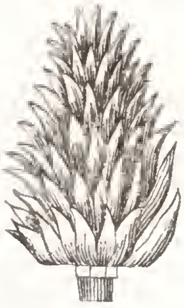
X
Decagynia
10. Pistilla.



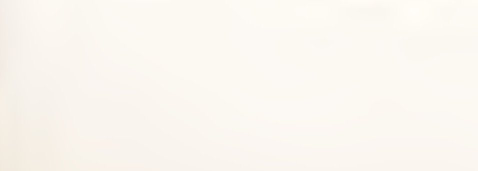
XI
Dodecagynia
12. Pistilla.



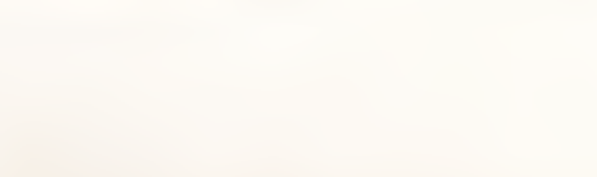
XII
Polyginia
Many Pistilla.



XIII
Gymnospermia
Seeds not Capsuled.



XIV
Angiospermia
Seeds in a Capsule.



Henderson del.

London. Published by Dr Thornton October 1811.

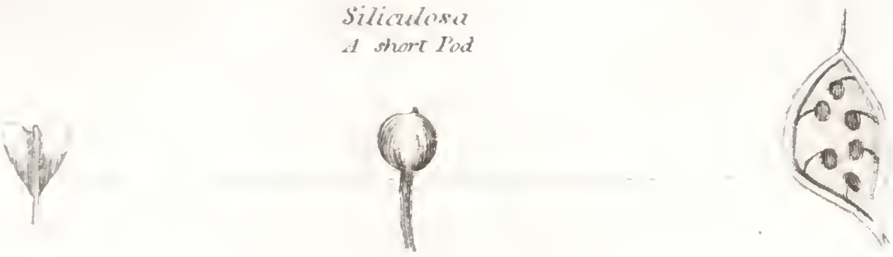
Warner sculp.

ORDERS CONTINUED

XV

Siliculosa

A short Pod



XVI

Siliquosa

A long Pod

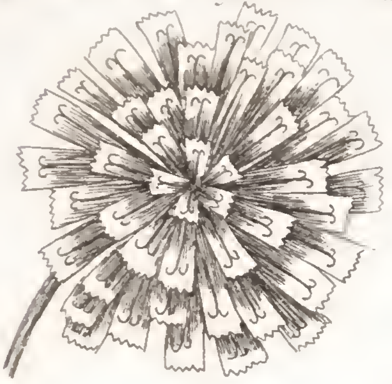
London, Published by Dr. Thornton October 1811.

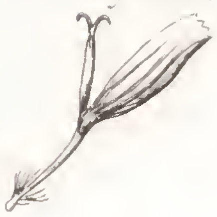
ORDERS CONTINUED

XVII

Polygamia Æqualis

orets all alike either ligulate or tubular

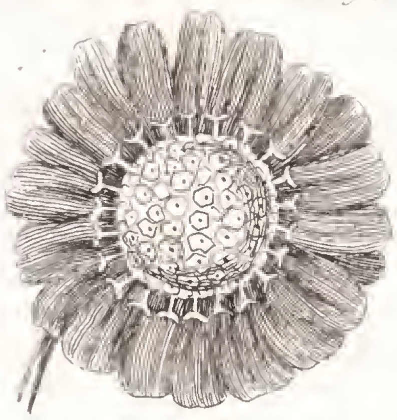




XVIII

Polygamia superflua

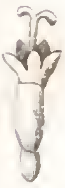
Central Florets Fertile. Do. of the Ray fertile.

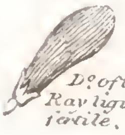


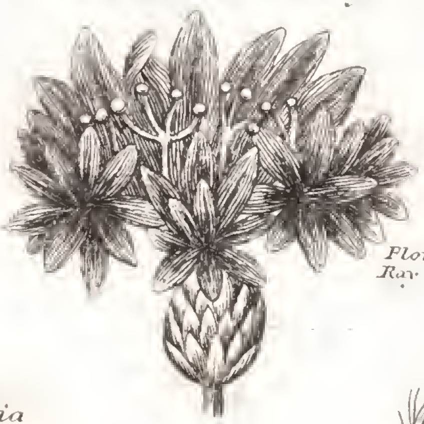
XIX

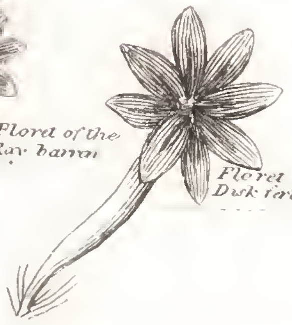
Polygamia frustranea

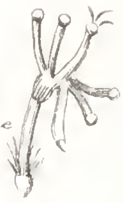
Central Floret fertile of the Ray barren







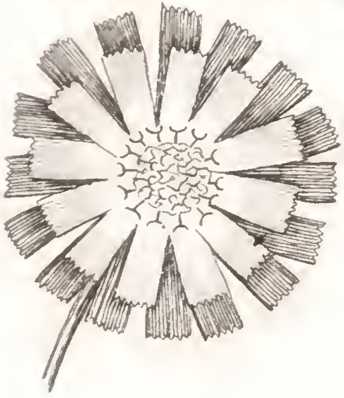


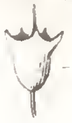


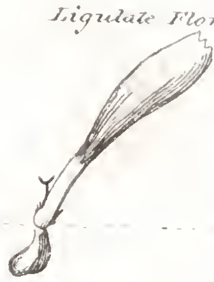
XX

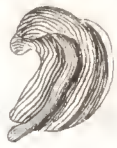
Polygamia necessaria

Central Floret barren of the Ray fertile







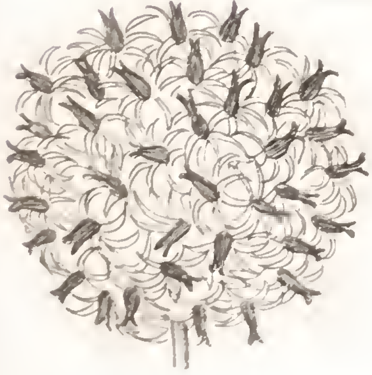


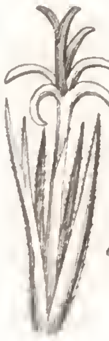
NB The Florets here are somewhat magnified.

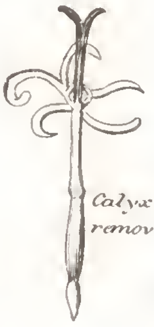
XXI

Polygamia segregata

Florets having a Calyx



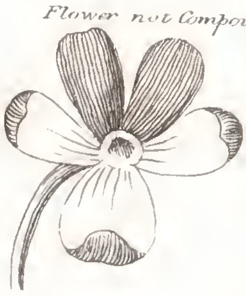


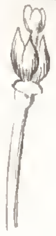


XXII

Monogamia

Flower not Compound





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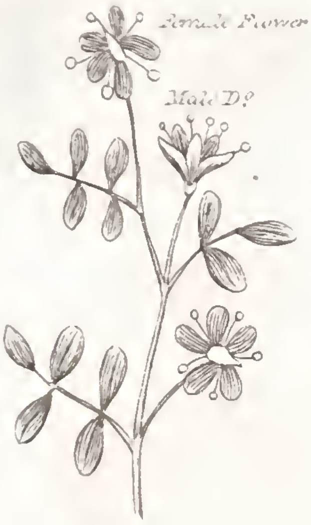
ORDERS CONTINUED

XXIII.

Monœcia

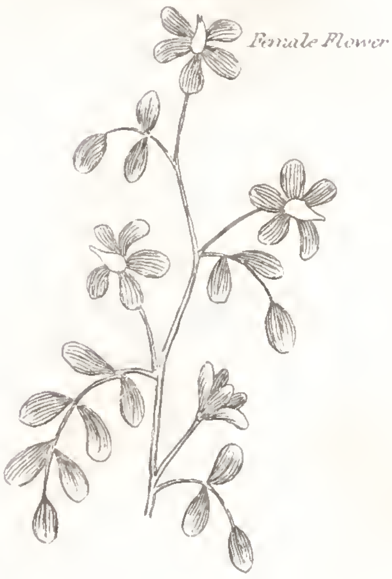
(Unisexual Flowers on the same Plant)



XXIV.

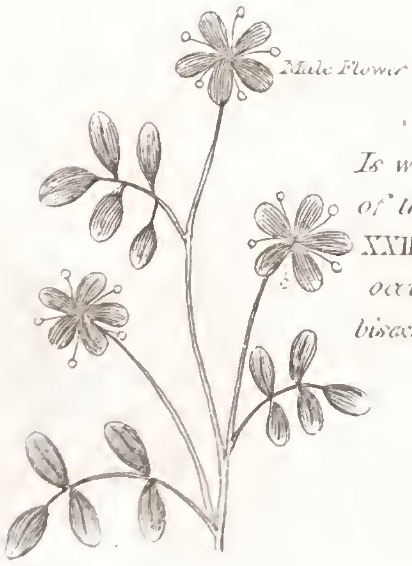
Diœcia

D° on different Plants,



XXV

*Triœcia.**



Is where flowers of the nature of XXIII, & XXIV, occur with bisexual flowers.

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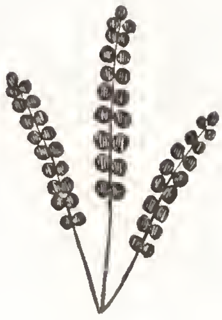
ORDERS CONTINUED

XXVI.
Filices.
(Ferns)



XXVII.
Musci.
(Moſses)

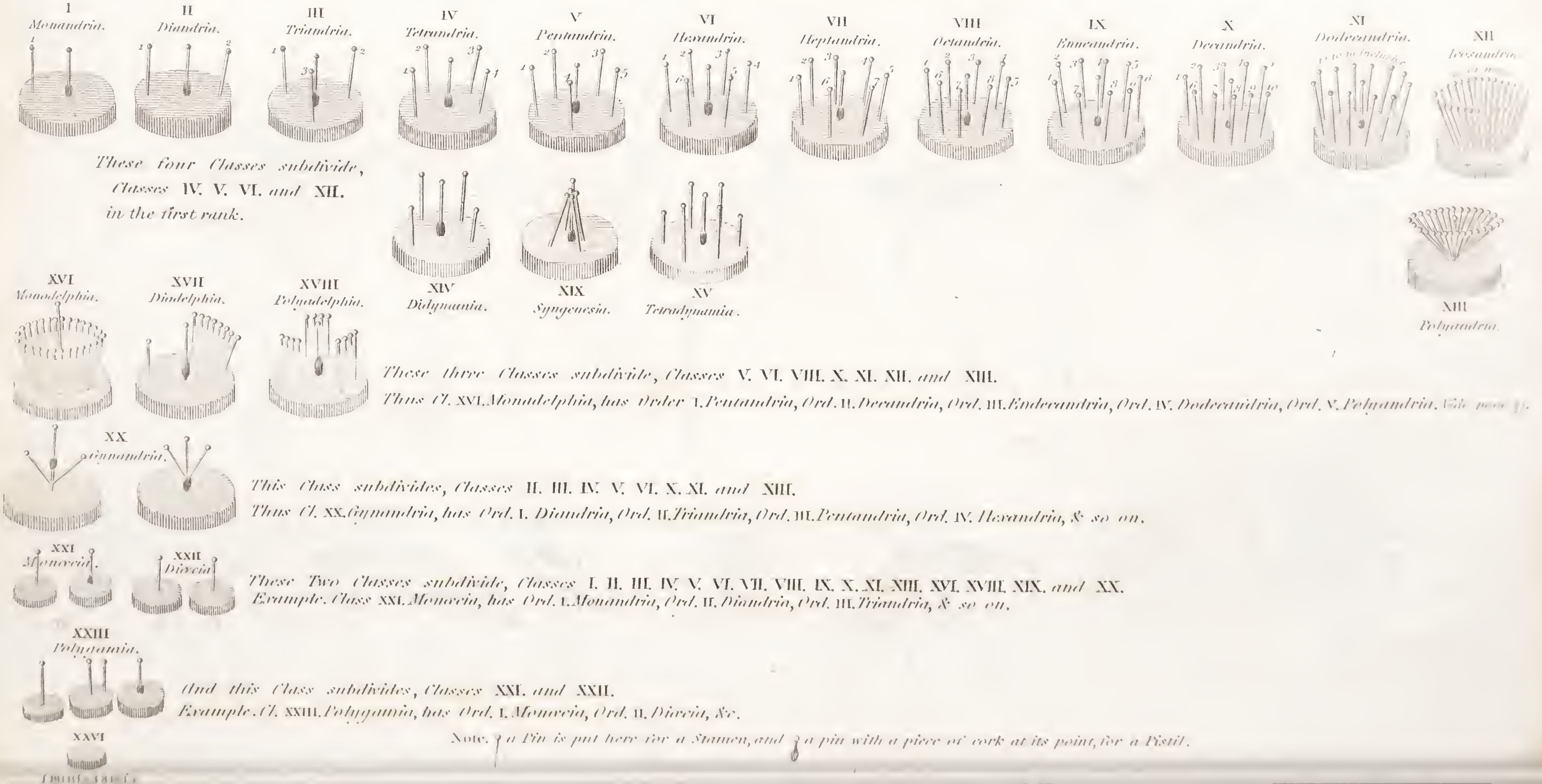
XXVIII.
Algæ.
(Sea Weeds)

XXIX.
Fungi.
(Mushrooms)

London Published by Dr. Thornton Octr. 1811.

To face p. 73.

A Symbolical Representation *of the* SEXUAL SYSTEM *of* CAROLUS VON LINNÆUS, *Explanatory of the* Reformed System.



These four Classes subdivide,
Classes IV. V. VI. *and* XII.
in the first rank.

These three Classes subdivide, Classes V. VI. VIII. X. XI. XII. *and* XIII.
Thus Cl. XVI. *Monadelphia, has Order* I. *Pentandria, Ord.* II. *Decandria, Ord.* III. *Endecandria, Ord.* IV. *Dodecandria, Ord.* V. *Polyandria. Vide post p.*

This Class subdivides, Classes II. III. IV. V. VI. X. XI. *and* XIII.
Thus Cl. XX. *Gynandria, has Ord.* I. *Diandria, Ord.* II. *Triandria, Ord.* III. *Pentandria, Ord.* IV. *Hexandria, & so on.*

These Two Classes subdivide, Classes I. II. III. IV. V. VI. VII. VIII. IX. X. XI. XIII. XVI. XVIII. XIX. *and* XX.
Example. Class XXI. *Monœcia, has Ord.* I. *Monandria, Ord.* II. *Diandria, Ord.* III. *Triandria, & so on.*

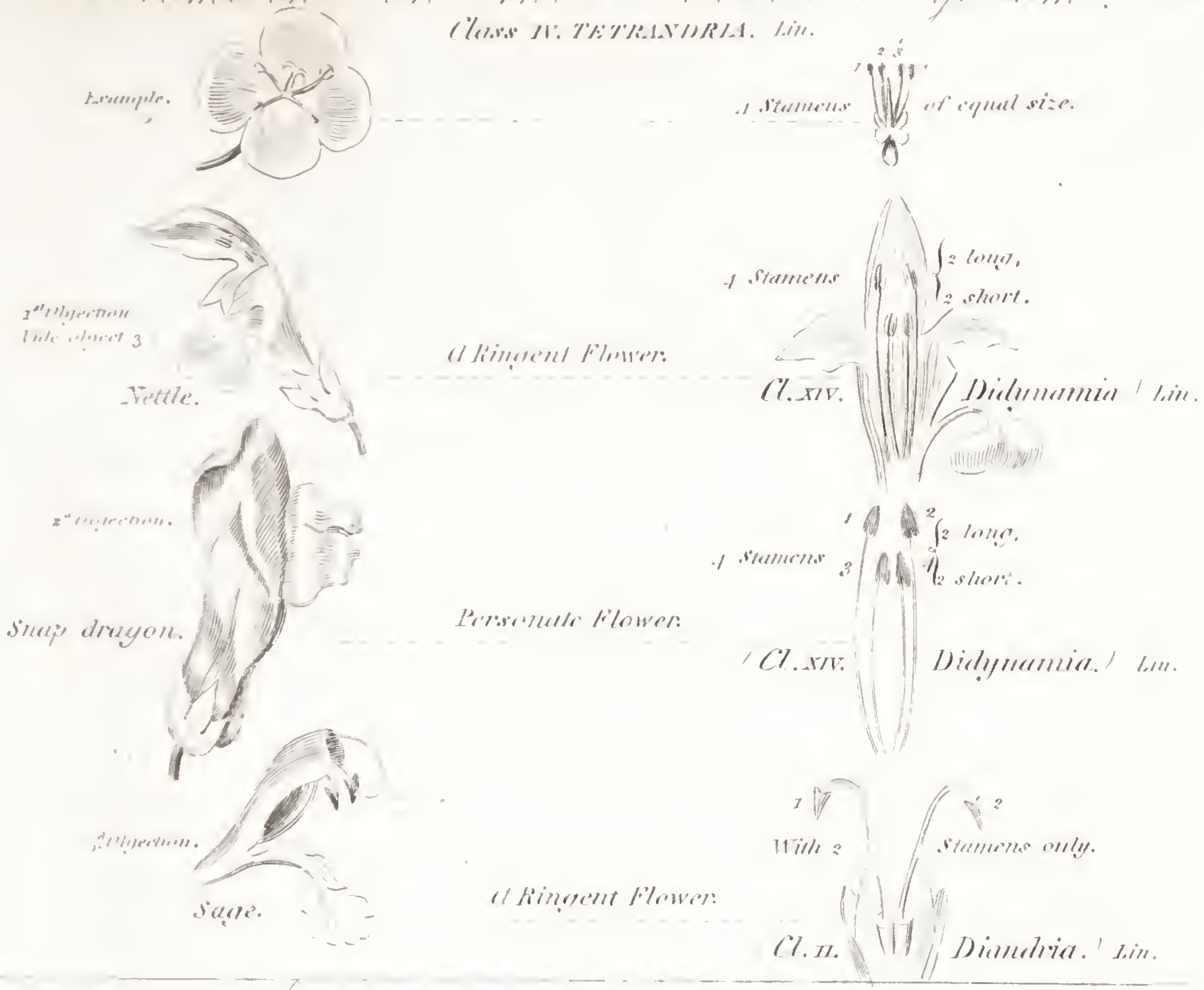
And this Class subdivides, Classes XXI. *and* XXII.
Example. Cl. XXIII. *Polygamia, has Ord.* I. *Monœcia, Ord.* II. *Diœcia, &c.*

Note. *a Pin is put here for a Stamen, and a pin with a piece of cork at its point, for a Pistil.*

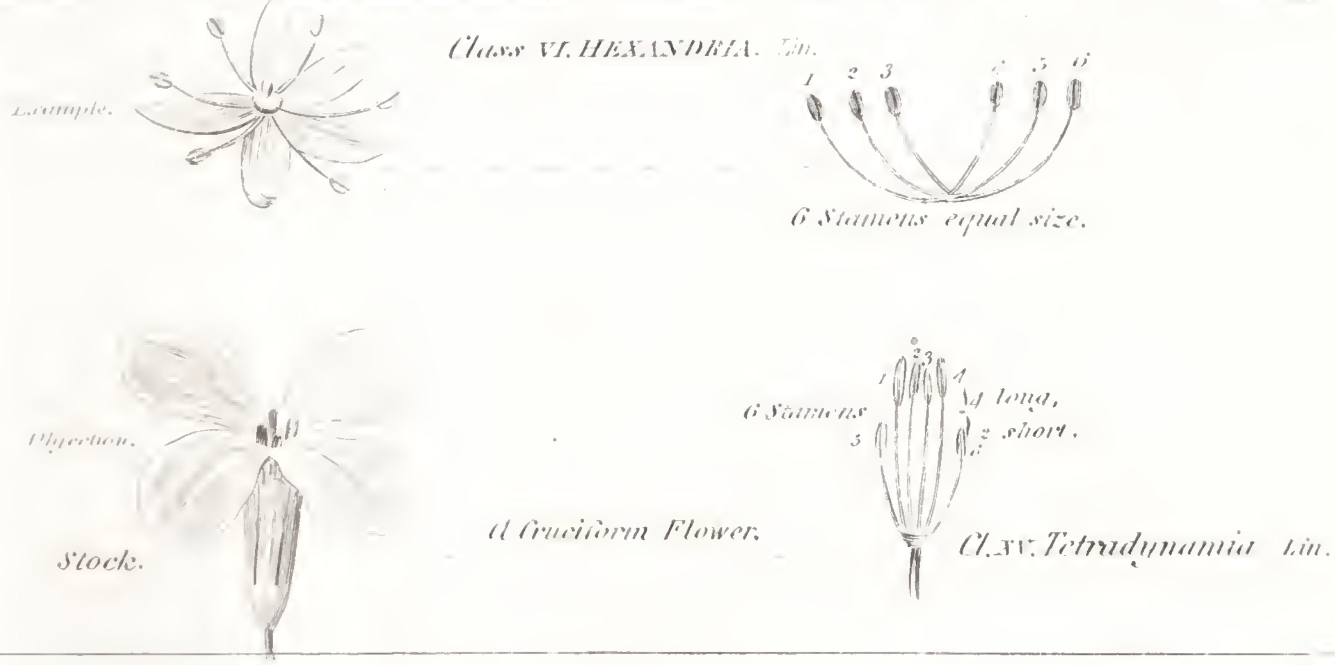
Remarks on the Sexual System.

To face p. 77.

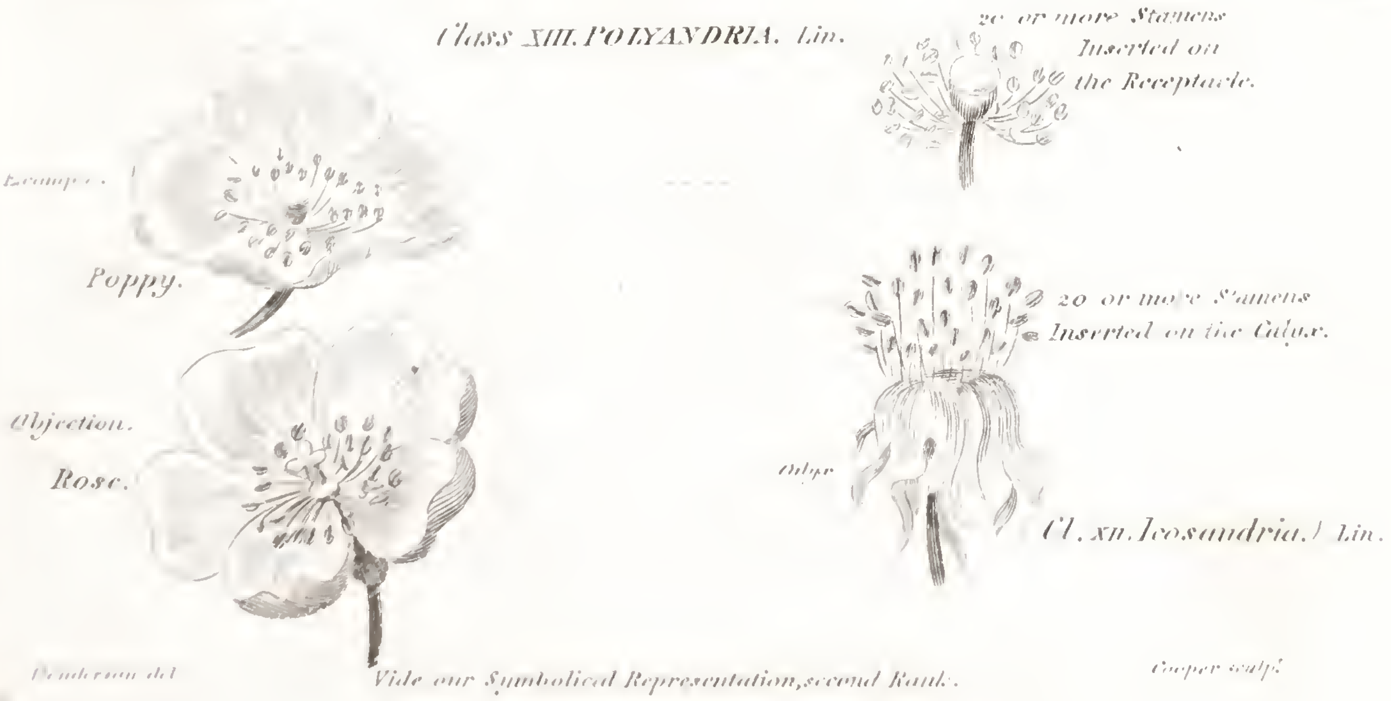
Class IV. TETRANDRIA. Lin.


Example.
4 Stamens of equal size.
1 2 3 4
1st Objection
Vide object 3
Nettle.
A Ringent Flower.
4 Stamens
2 long,
2 short.
Cl. XIV. Didynamia Lin.
2d Objection.
Snap dragon.
Personate Flower.
4 Stamens
1 2 3 4
2 long,
2 short.
(Cl. XIV. Didynamia.) Lin.
3d Objection.
Sage.
A Ringent Flower.
1 2
With 2 Stamens only.
Cl. II. Diandria.) Lin.

Class VI. HEXANDRIA. Lin.



Class XIII. POLYANDRIA. Lin.



Henderson del.

Vide our Symbolical Representation, second Rank.

Cooper sculp.

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REMARKS

On some Parts of the Sexual System, with the Reasons for our Reform.

I. The Class IV. TETRANDRIA, being a numerous one, LINNÆUS chose to separate it into two, and an opportunity presented itself from the consideration of the differences which occur in plants having four stamina, from the *proportion* of these. DIDYNAMIA expresses this difference; and the flowers are either *ringent*, or *personate*, a *natural tribe.* But as *all* the *ringent* flowers are not included in the class DIDYNAMIA, some coming under Class II. DIANDRIA, there can be no good reason for not making this real division of a class into *an Order.* The System *hence* becomes more *easy* and *regular*, and in fact *more frequently approaches to a perfect or natural system.*

II. The Class VI. HEXANDRIA, also readily separates into two parts, from the like consideration of the *proportion* in the stamina, and TETRADYNAMIA contains the *natural tribe* of *cruciform* plants, which, according to the just rules of art, is an *Order.*

III. The Class XIII. POLYANDRIA, also readily divides into two parts, from the consideration of the *insertion* of the stamina, and one of these, the ICOSANDRIA, of Linnæus, possesses *many edible fruits*, but as it is not altogether a *natural class*, therefore no one can regret seeing this class also made to form an *Order*.

IV. In the Class XVII. MONADELPHIA of Linnæus, many of the numerical names, which had been used to characterize the Classes, are employed to distinguish the Orders, or subdivisions, as *Pentandria*, *Decandria*, &c. and hence arises a confusion unavoidably perplexing to the young student, and which our Reform, as is evident, completely removes. The same observation applies to the Classes XVII. *Diadelphia*, XVIII. *Polyadelphia*, XX. *Gynandria*, XXI. *Monœcia*, XXII. *Diœcia*, where the same, (may I call it so?) impropriety occurs*. These classes in LINNÆUS are *not natural*, but being made into *orders*, many of them then become *natural* as *orders*, as the COLUMNIFERÆ.

V. The *Papilionaceous Flowers*, as they are generally termed, form the Order *Decandria* in the Class XVII. DIADELPHIA, of Linnæus; but the author, unwilling, as it would seem, to make any breach in so natural an assemblage of plants, has so far deviated from the principles of his System, as to refer to that Class several genera, which strictly belong to the preceding

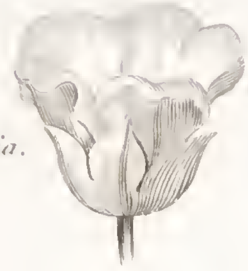
---

* The reader is requested to consult now the Analysis of the Sexual System before given, the better to understand these remarks.

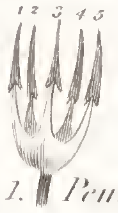
Face p. 78.

Remarks on the Sexual System.

Class XVI. MONADELPHIA. Lin.

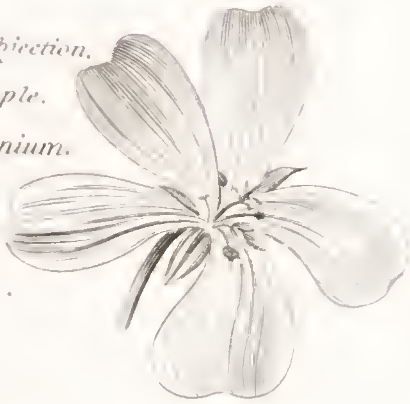

Hermannia.

5 Stamina.

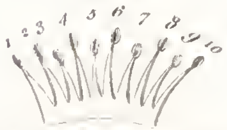


(Order 1. Pentandria.)

2nd Objection.
Example.
Geranium.



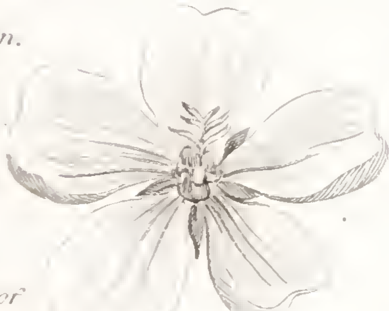
10 Stamina.



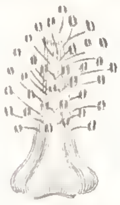
Order 2. Decandria. (Lin.

Order 3. Endecandria (Lin.
Order 4. Dodecandria (Lin. & so on to
Many Stamina.

3rd Objection.
Example.
Mallow.

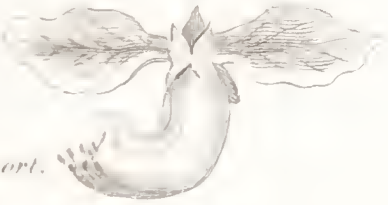


his flower is of
d. Column-bearing.

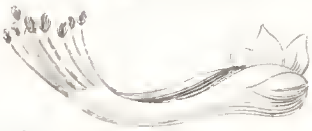


Order 5. Polyandria. Lin

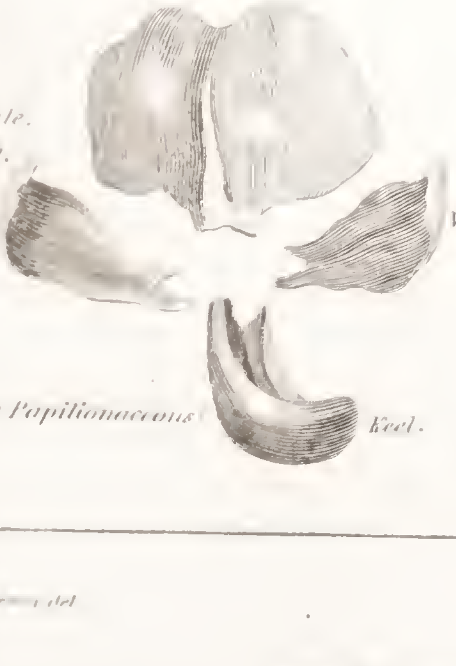
Class XVII. DIADELPHIA. Lin.


Millewort.

8 United Stamina.



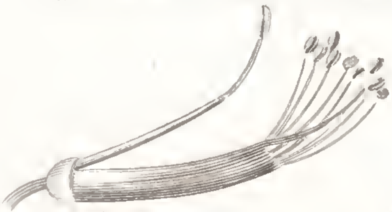
Order 3. Octandria. Lin.



Example.
Pea.

Flower Papilionaceous

9 United Stamina. 1 disunited.



Order 4. Decandria. Lin.

[illegible] del | Cooper sculpt

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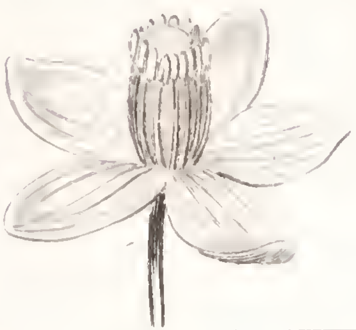
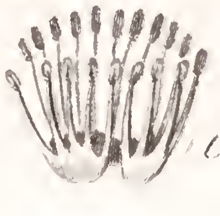
Remarks on the Sexual System.

To face p. 79.

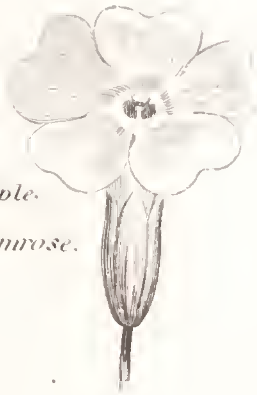
Class XVIII. POLYADELPHIA. Lin.

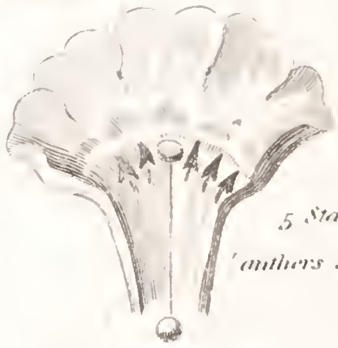


20 or more Stamina inserted on the Calyx.

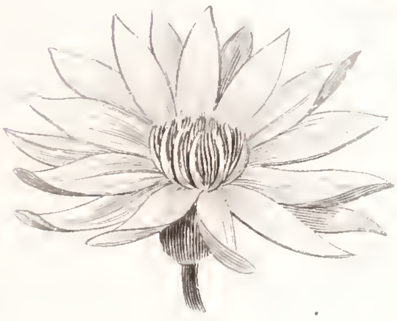

Order 3 Icosandria. Lin.

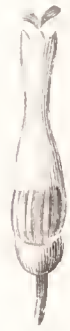
Class V. PENTANDRIA. Lin.

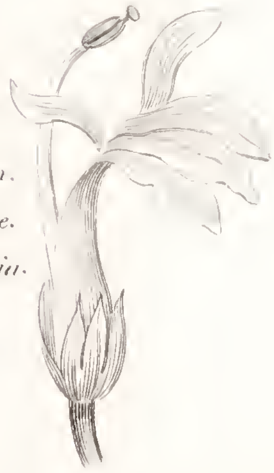


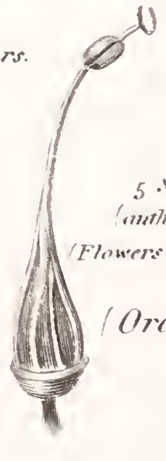


Class XIX. SYNGENESIA. Lin.









Henderson del. Cooper sculp.

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Class, being in fact *Monadelphious.* This inconvenience is entirely obviated in the present scheme, where *Monadelphia* and *Diadelphia* constitute two successive Orders to the Class X. *Decandria.*

VI. POLYADELPHIA is a small, and, as Doctor SMITH observes, "*rather an unnatural class.*" Most persons are shocked to see CITRUS, the Orange, in this class, and not in the *Icosandria* class; for LINNÆUS describes it of the Class XVIII. POLYADELPHIA, Order III. *Icosandria.* Now in our *Reformed Sexual System*, it comes under Class XIII. POLYANDRIA, Order *Icosandria*, in juxta-position with other edible fruits, entering into our subdivision POLYADELPHIA.

VII. Class V. PENTANDRIA, a very numerous class, is subdivided by SYNGENESIA, and so formed into two classes by Linnæus, the latter of which, however, as containing an order, MONOGAMIA, is not, therefore, altogether a *natural class.* We obviate this by making *Syngenesia* an order, and the subdivision *Polygamia* to contain the natural tribe of compound flowers; whilst, under another subdivision, *Monogamia*, several plants not having compound flowers would arrange themselves.

VIII. Against GYNANDRIA, which Dr. Smith calls "an odd and miscellaneous class," there lies the same objection, as we observed above, as against the class DIADELPHIA, the numerical names of classes being applied to Orders. In our scheme, Class II. DIANDRIA, has an Order GYNANDRIA, which contains the *natural tribe* of ORCHISES*; and thus the mind is delighted to see a *natural assemblage* an order, if not as a class. The separation of the remainder cannot be regretted, as not possessing amongst each other the smallest affinity.

IX. MONŒCIA is a miscellaneous class, and borrows the name of its secondary divisions from most of the other classes, as *Monandria, Diandria,* &c.; nay even from *Monadelphia, Syngenesia,* and *Gynandria*; for all these become, in Linnæus's Sexual System, *Orders.* In our scheme, Class TRIANDRIA, which contains mostly *grasses,* has Order *Monœcia,* hence it is we retain this *natural assemblage* in the same class *at least,* if not in the same order.

X. DIŒCIA. The same remarks apply here, as in MONŒCIA.

XI. POLYGAMIA is subdivided by the classes *Monœcia* and *Diœcia*; these in the logic of science are, therefore, in reality orders.

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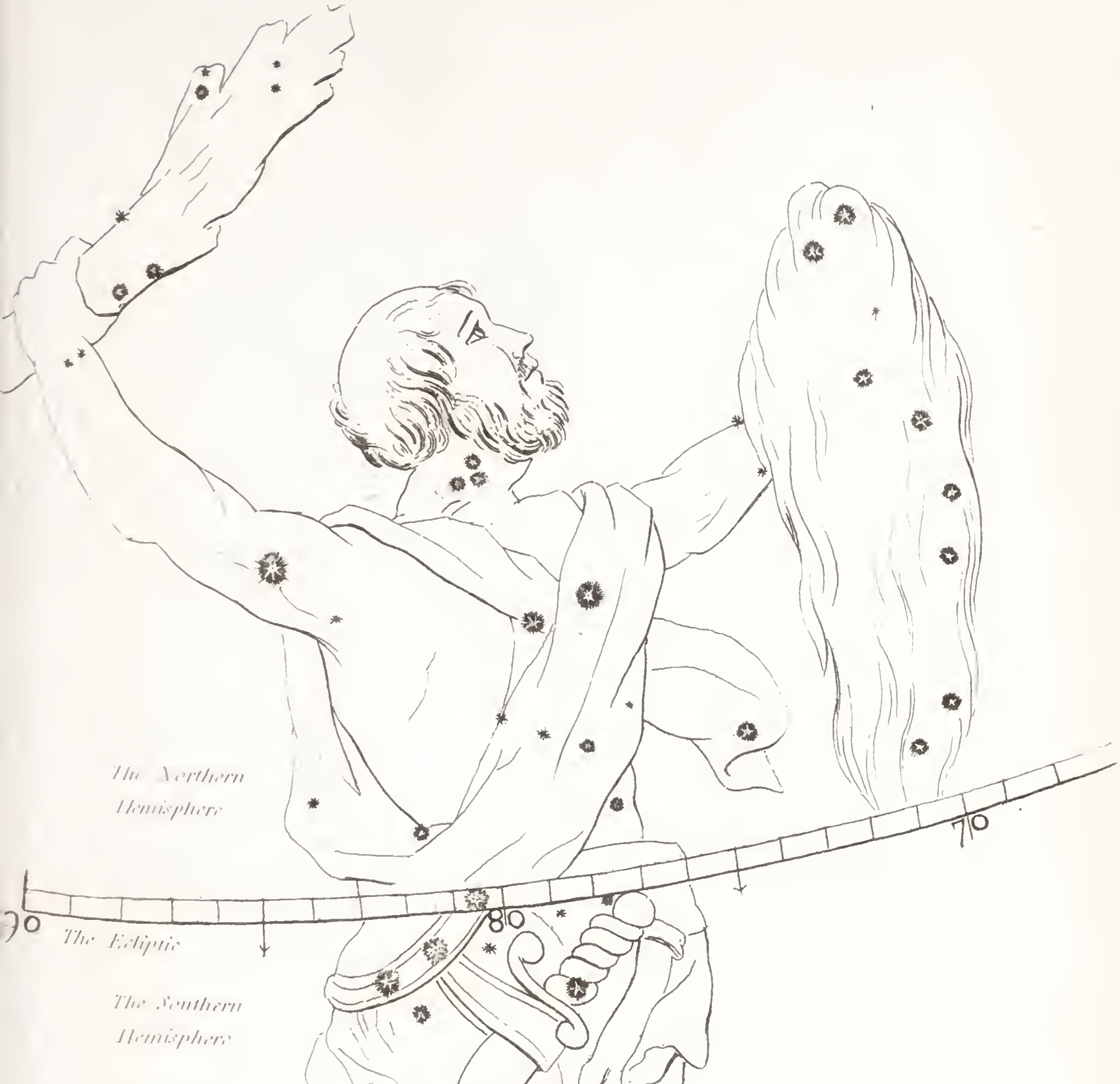
* *Vide* "The British Flora," page 32.

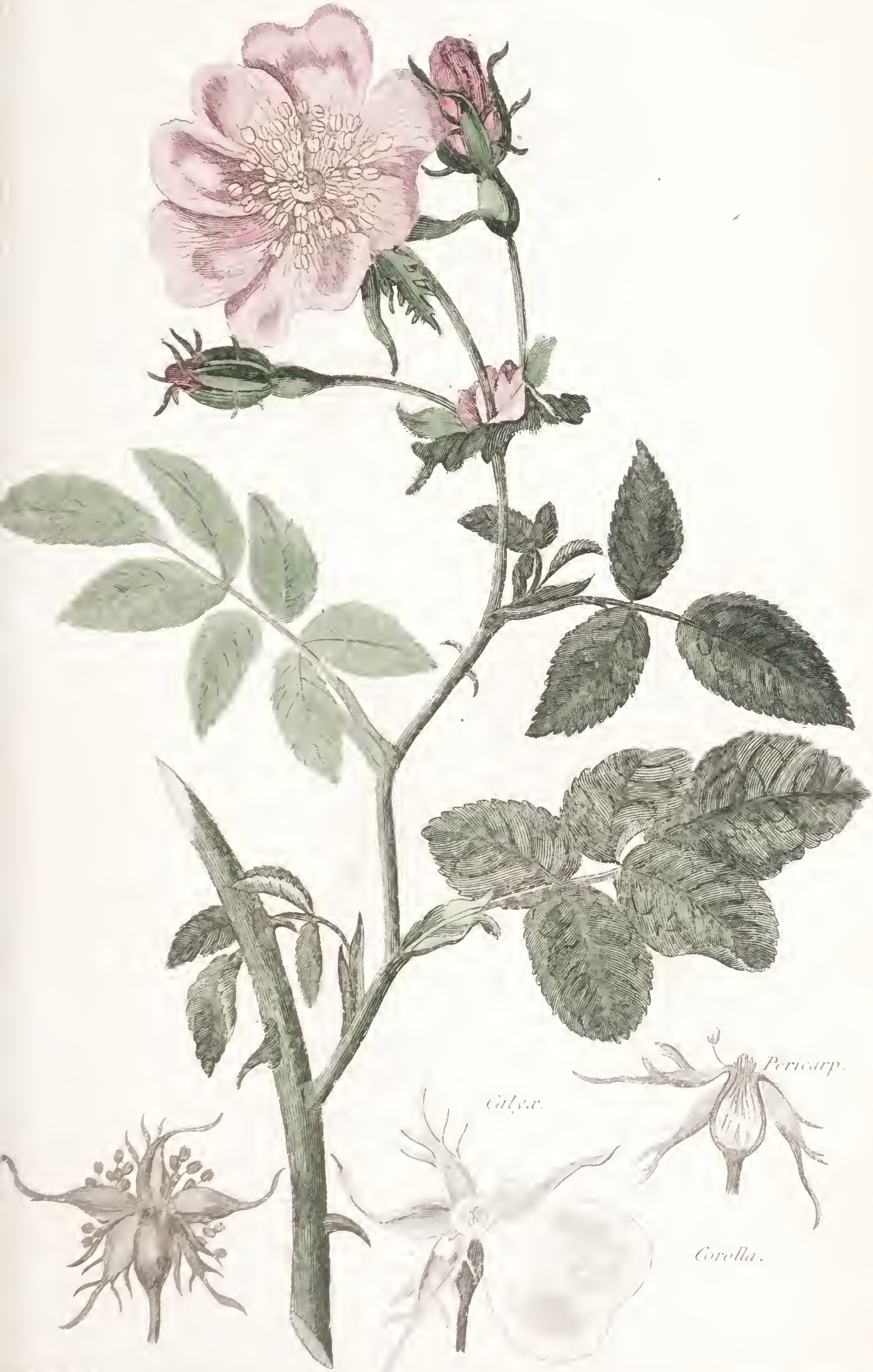


er del.

Moses sculp

London, Published by D. Thompson Sept 1 [illegible]

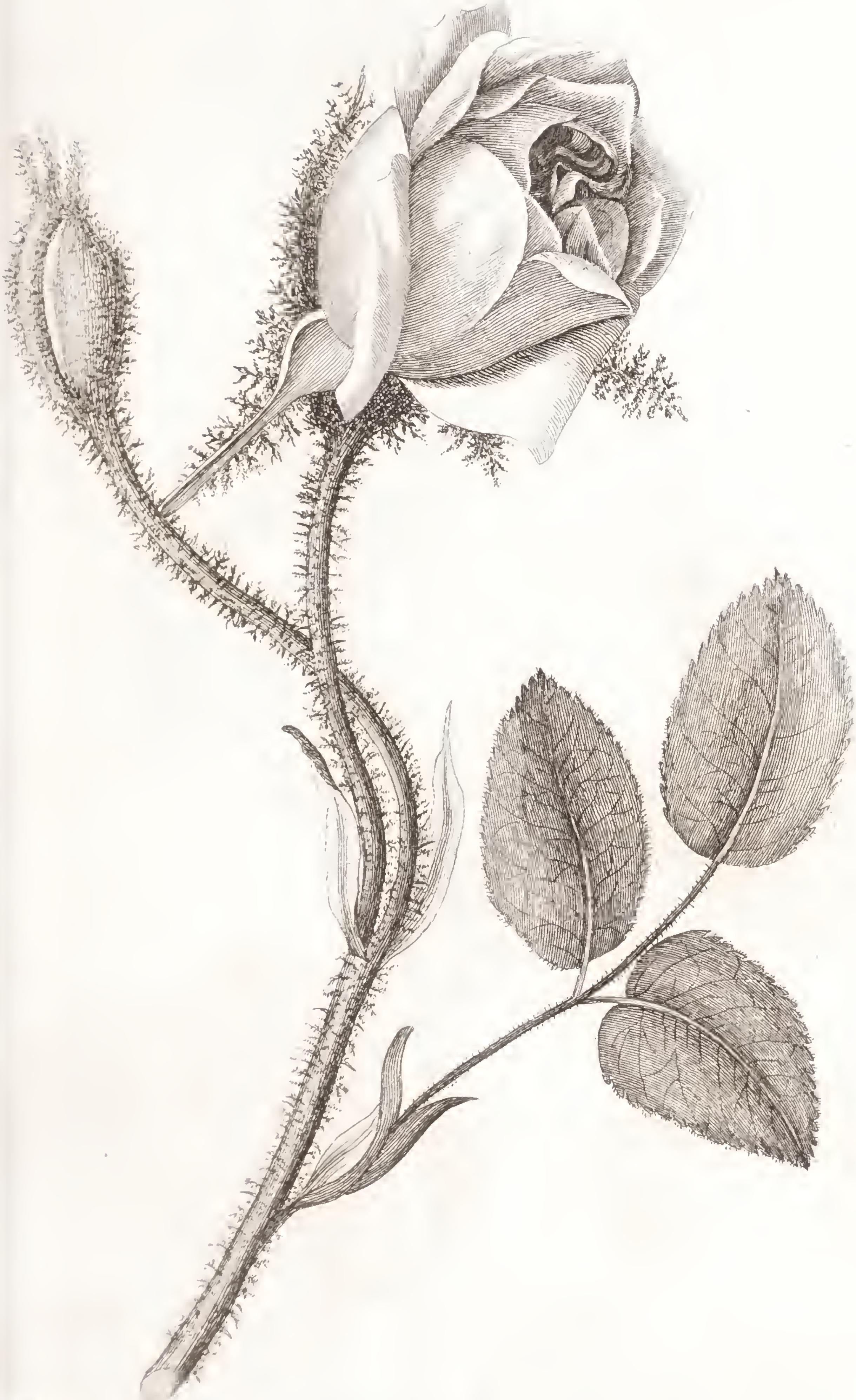
Species 1. Dog Rose.



dsen del.   Mad sculp.

[illegible]

Species 2. Moſs Rose.



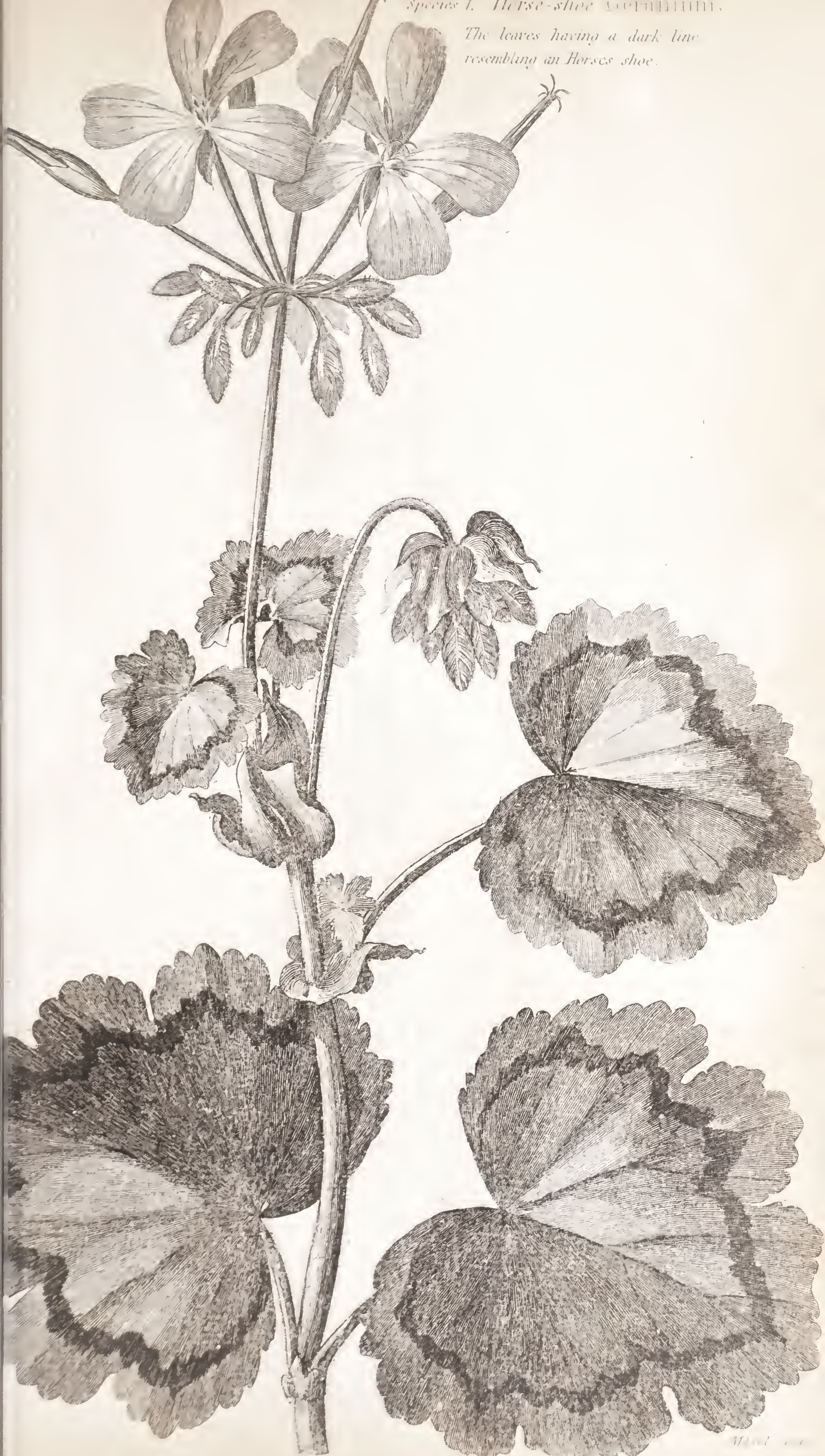
del.

London Published by D^r. Thornton Aug^t. 1. 1810

Maz[illegible]

Species I. Horse-shoe Geranium.

The leaves having a dark line resembling an Horses shoe.



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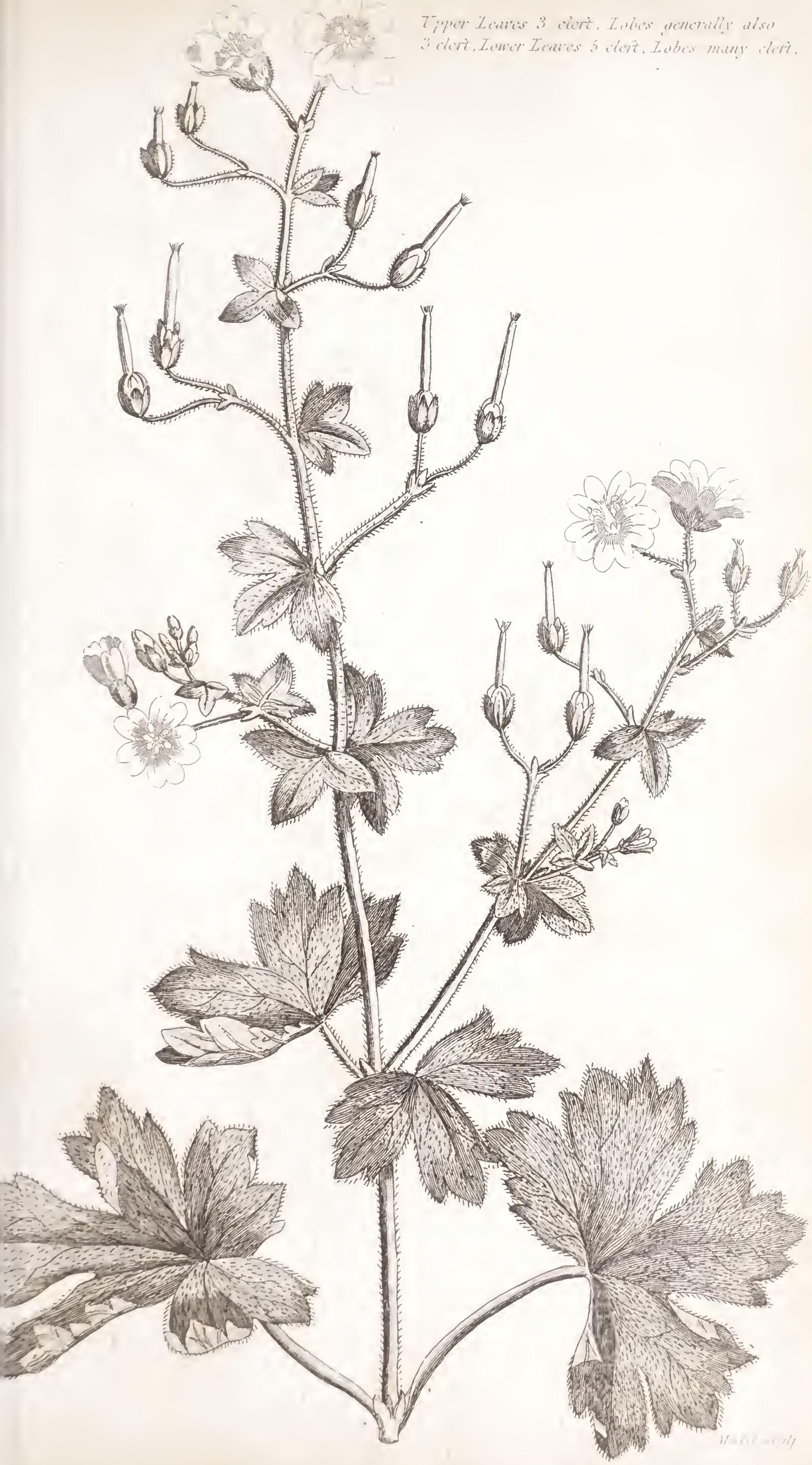
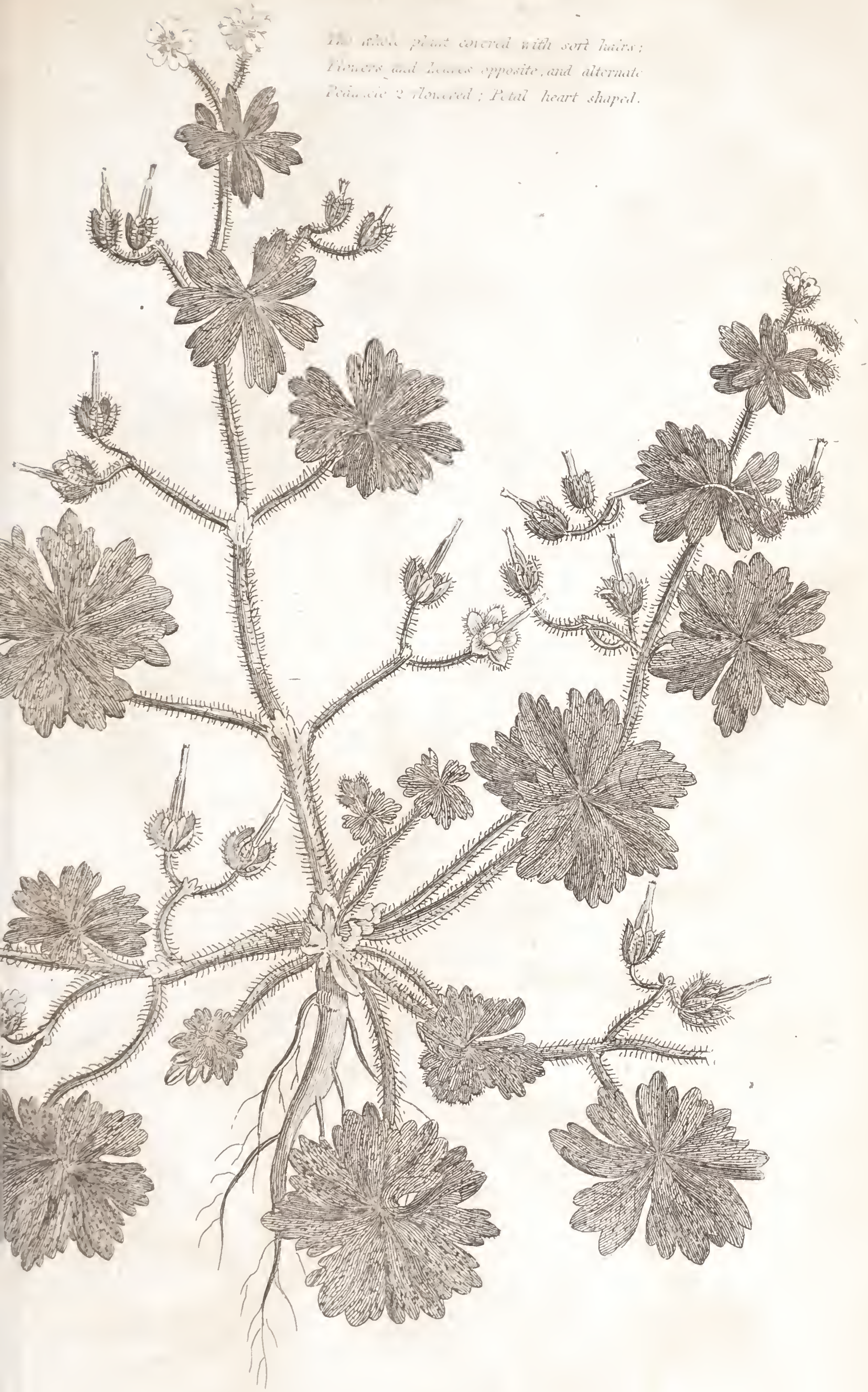
Upper Leaves 3 cleft, Lobes generally also 3 cleft, Lower Leaves 5 cleft, Lobes many cleft.



Species 3. Soft Geranium.

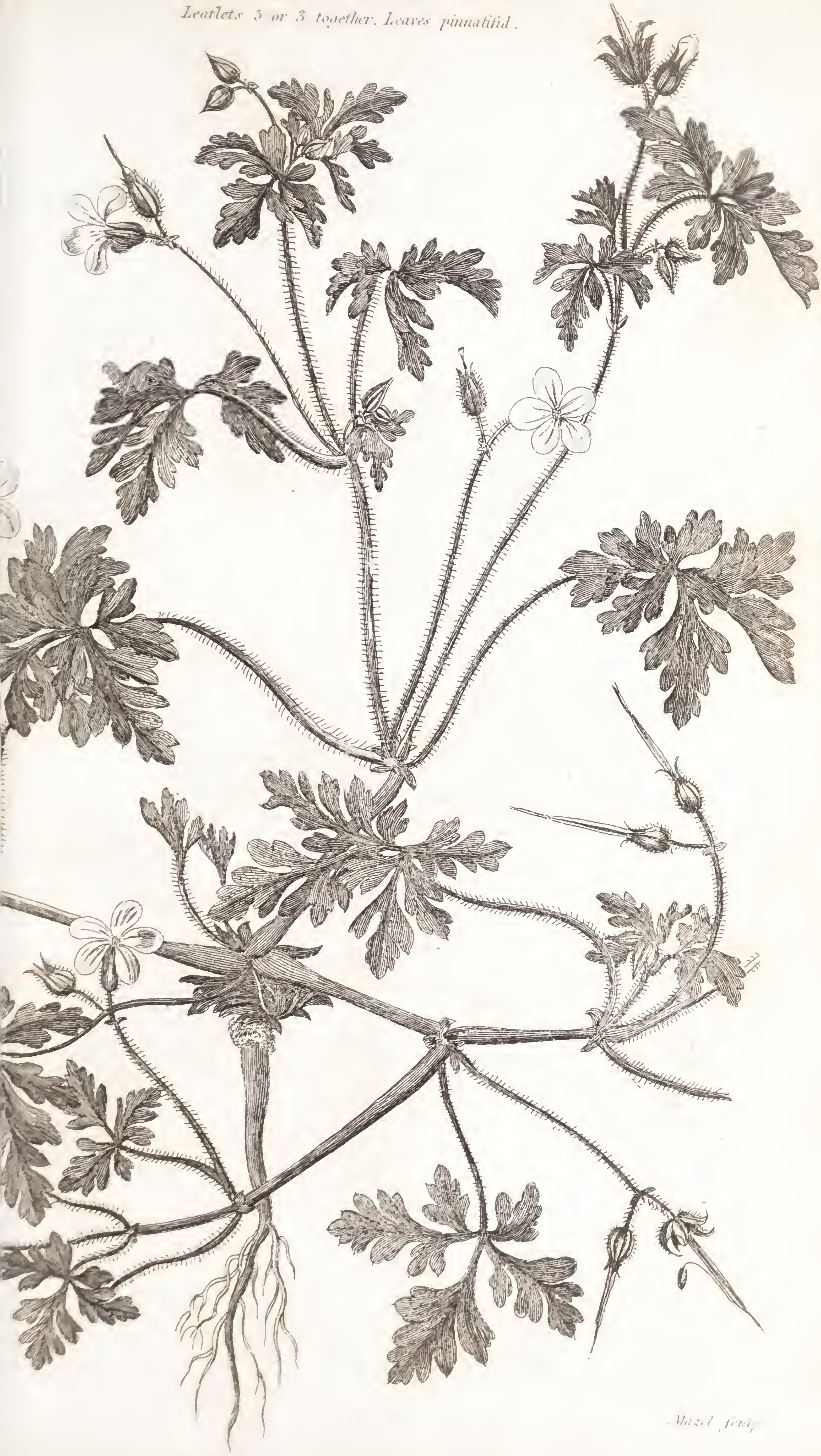
The whole plant covered with soft hairs;
Flowers and leaves opposite, and alternate
Peduncle 2 flowered; Petal heart shaped.



London Published by D Houghton Sept 1 1810

Species 4. Herb. Robert Geranium.

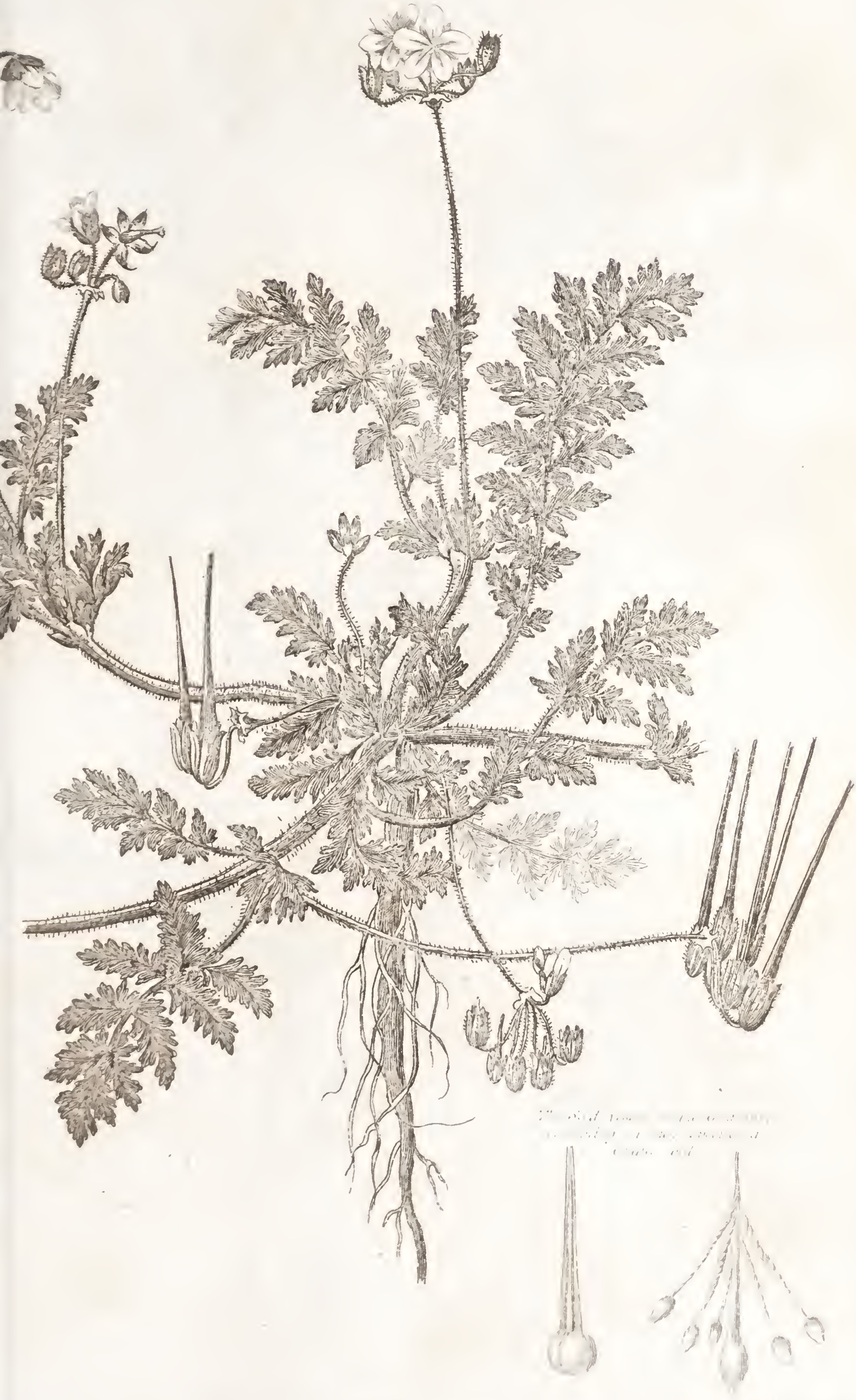
Leaflets 5 or 3 together. Leaves pinnatifid.



Mazel fecit

Species 3. Hemlock-leaved Geranium.

Leaves pinnate, incised.



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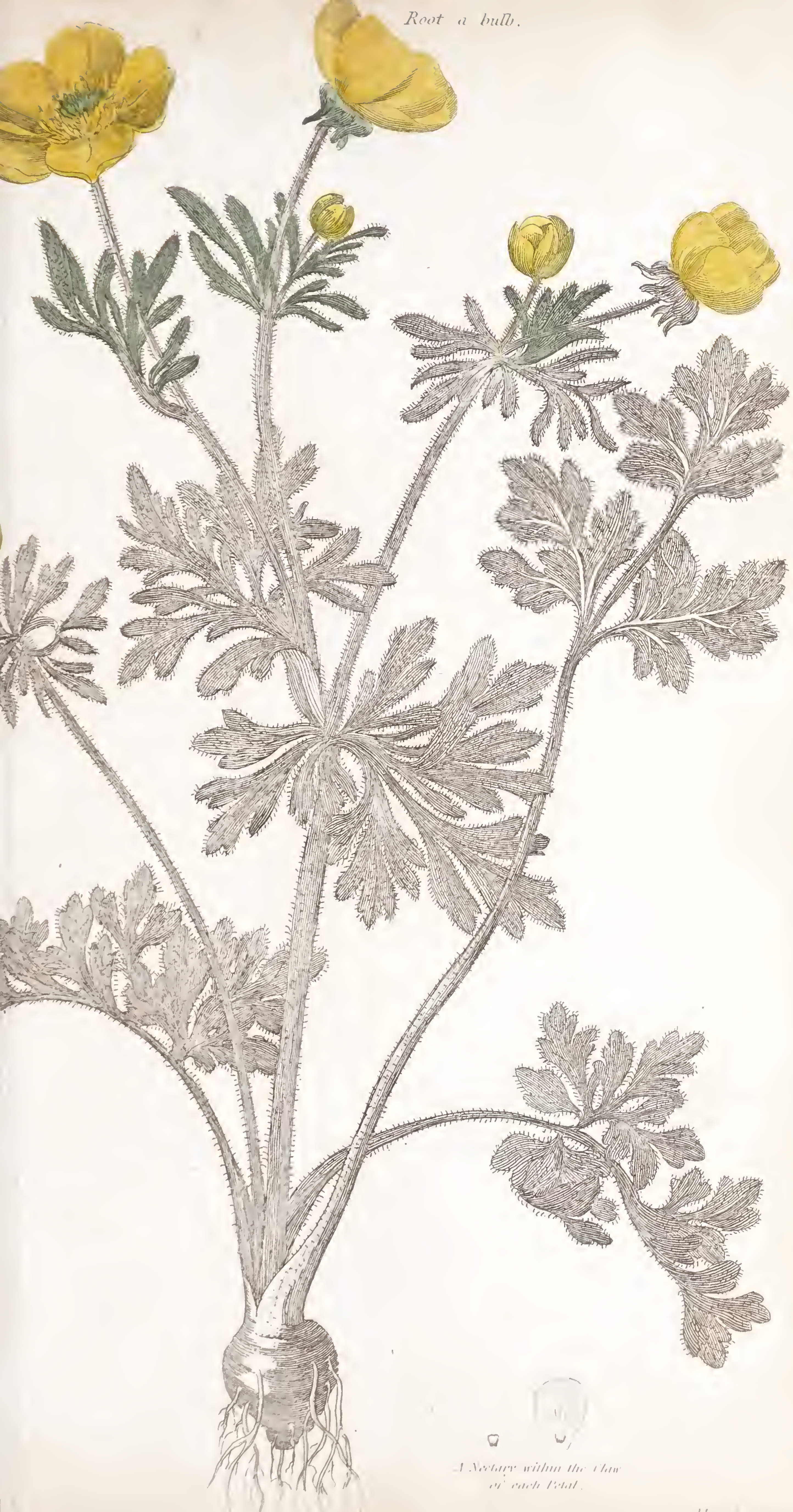
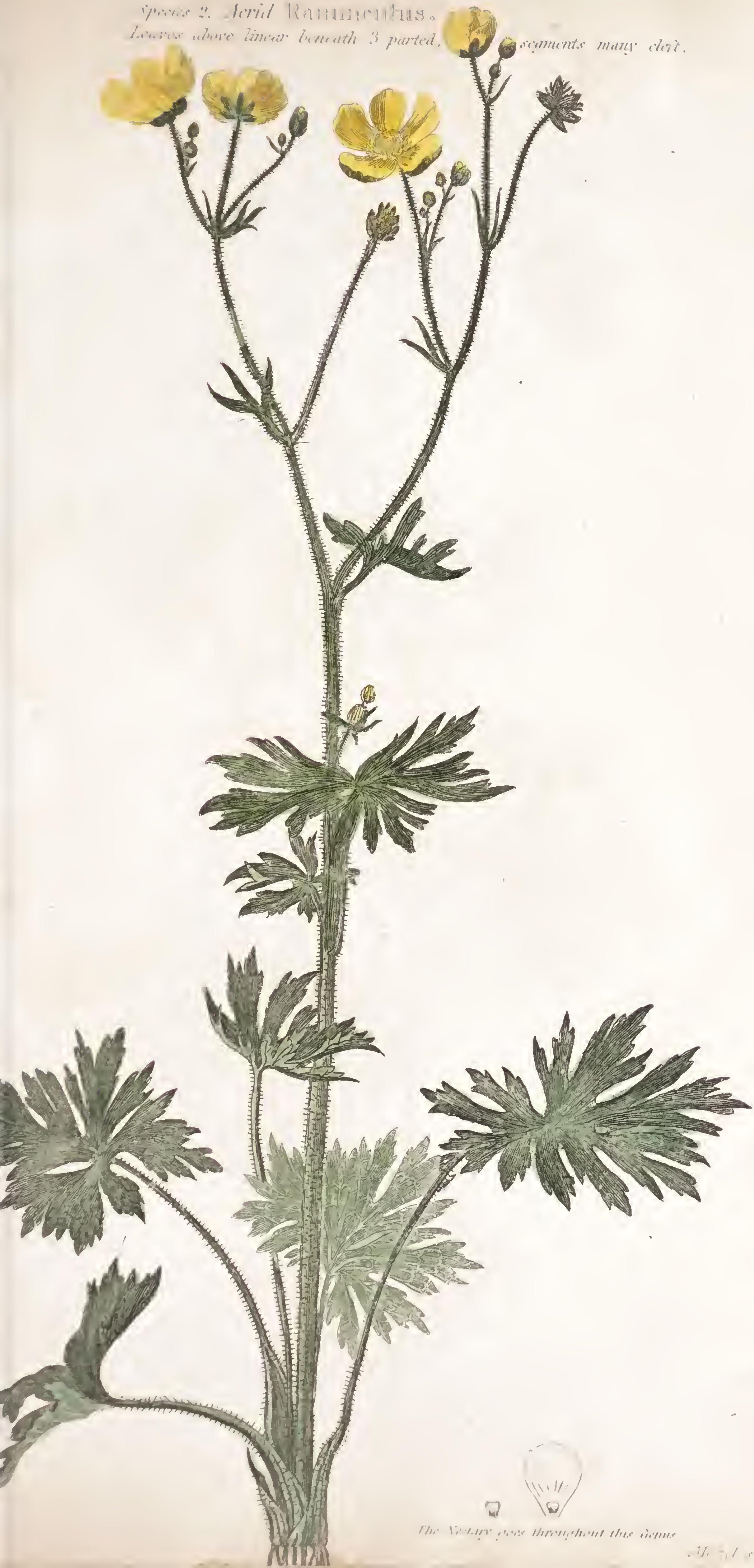


A Nectary within the Claw of each Petal.

Species 2. *Acrid* Ranunculus.

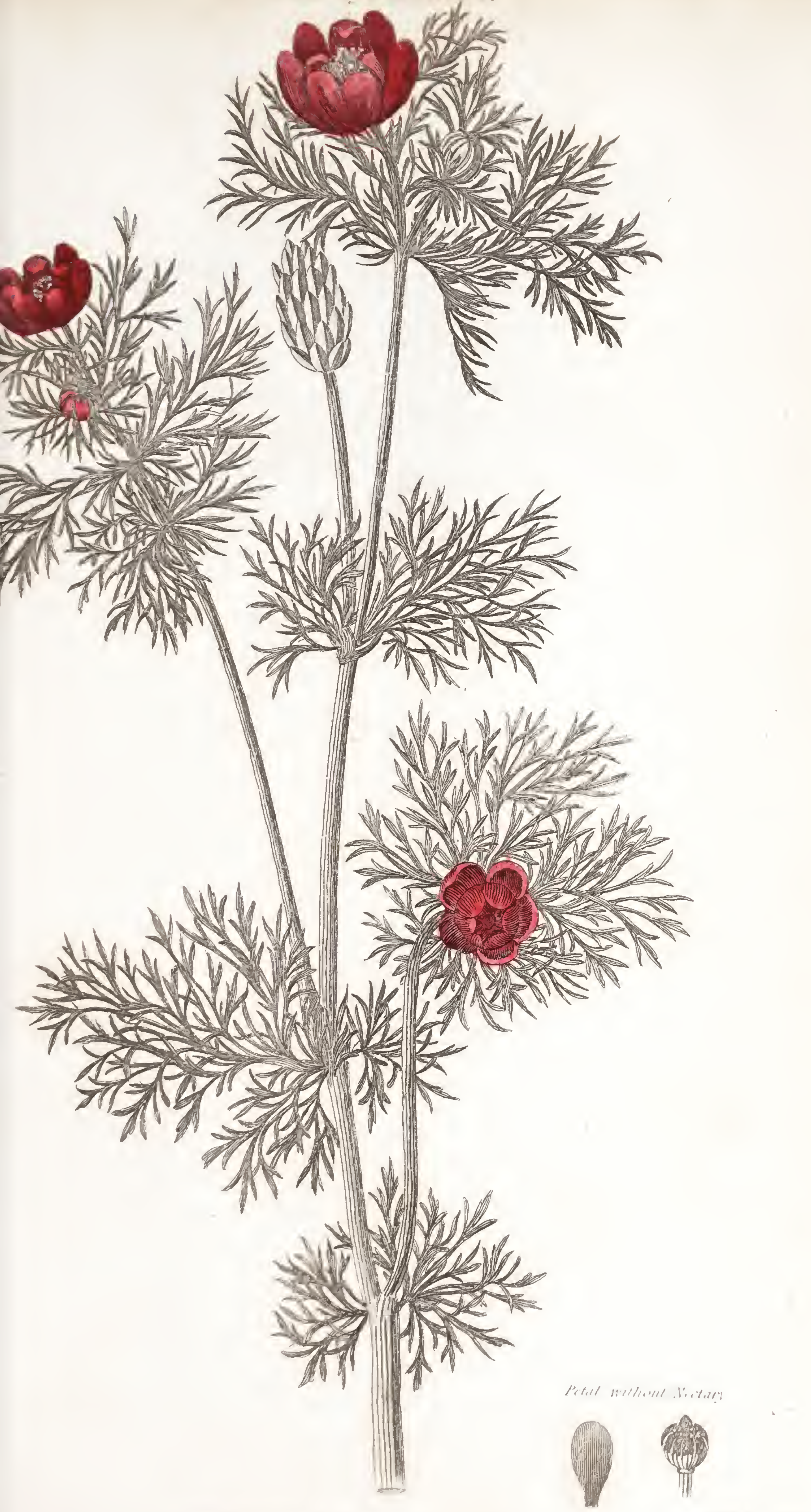
Leaves above linear beneath 3 parted, segments many cleft.



The Nectary goes throughout this Genus

[illegible] sculp

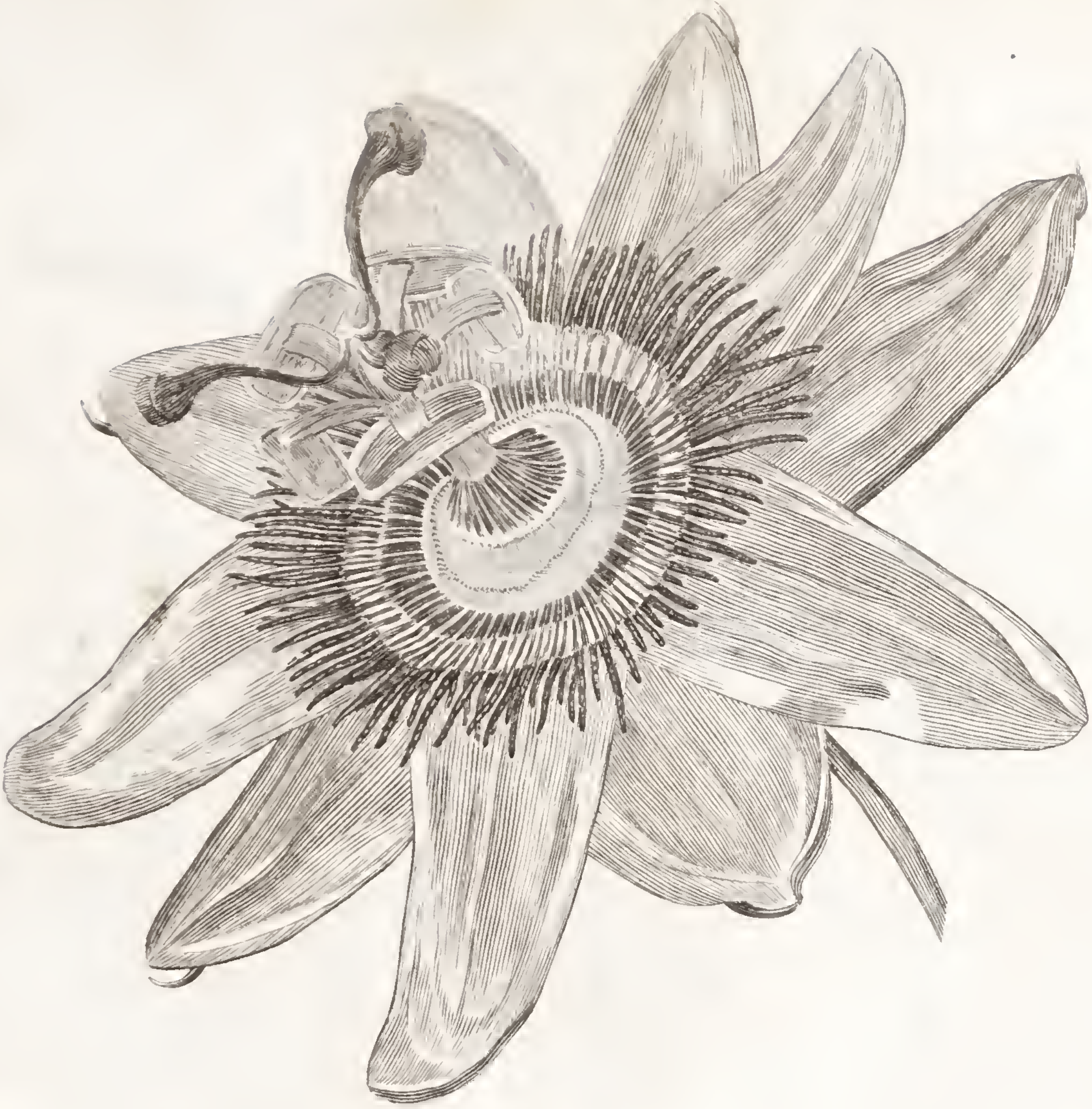
Pheasants Eye Adonis.



London Published by R. Thornton, Sept. [illegible]

Mazell sculp

Passion Flower.



Species 1. Common Blue Paſsion Flower

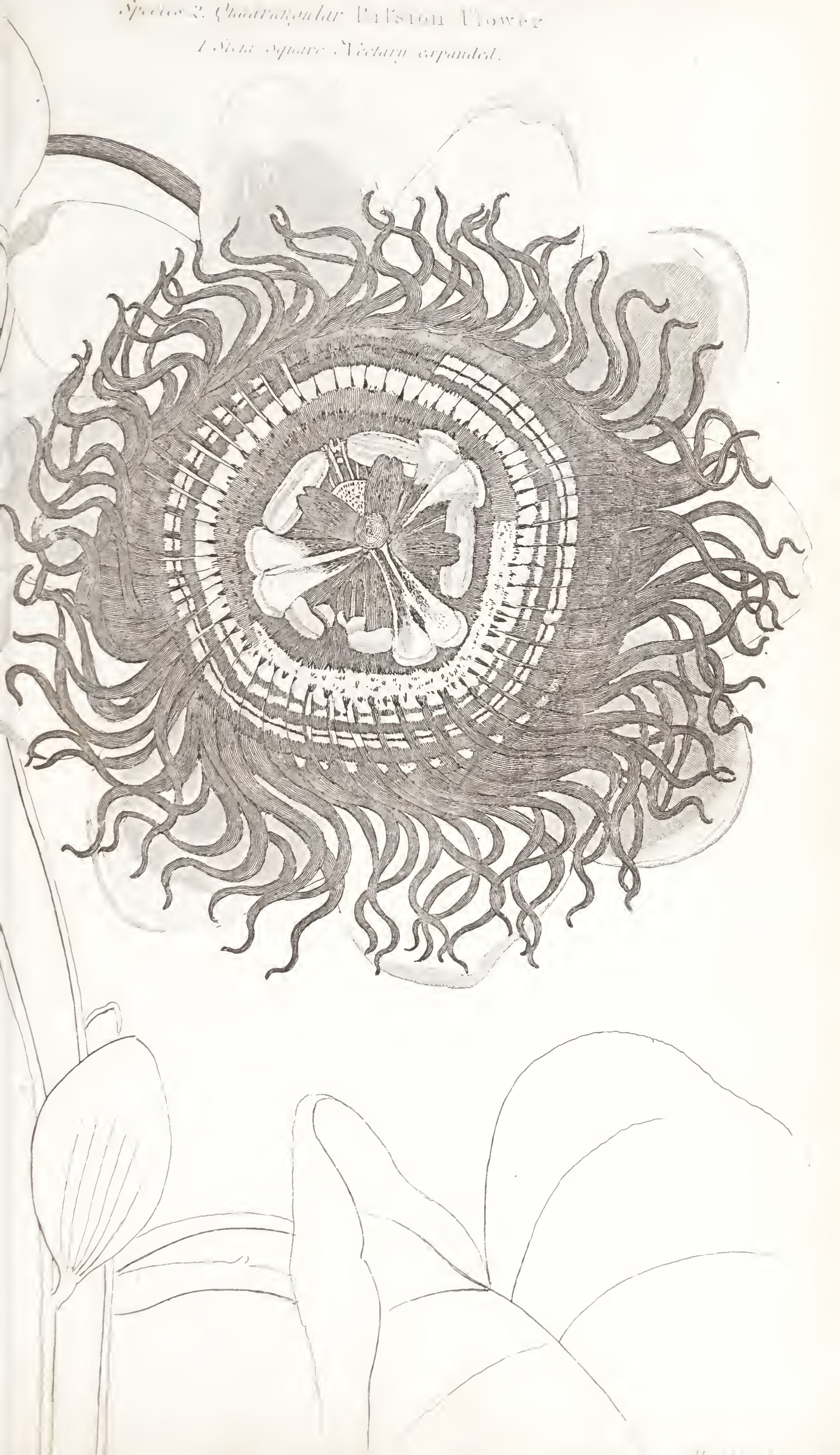
Nectary blue.

Mazel sc.

Passion Flower.

Species 2. Quadrangular Paſsion Flower

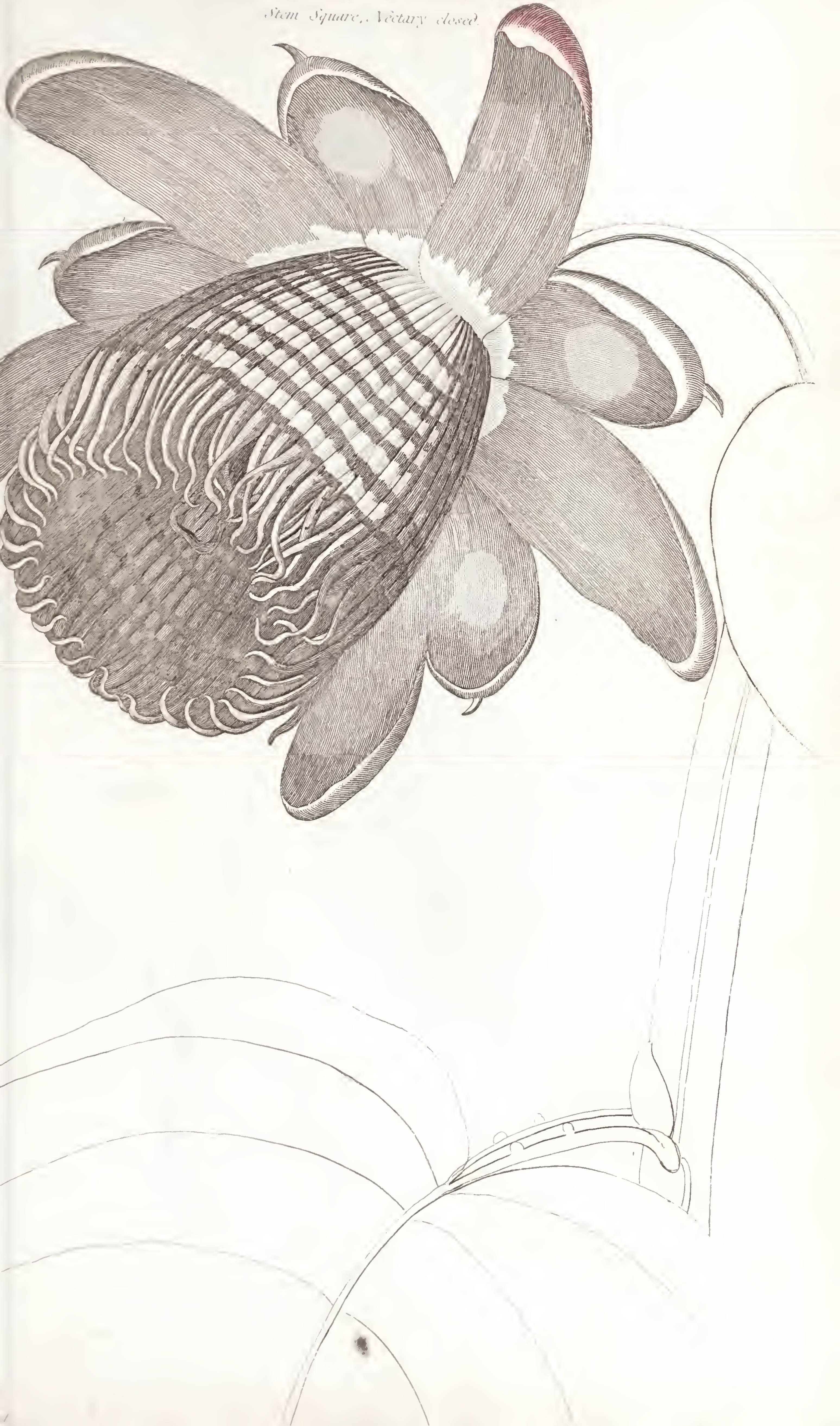
1 Stem Square Nectary expanded.



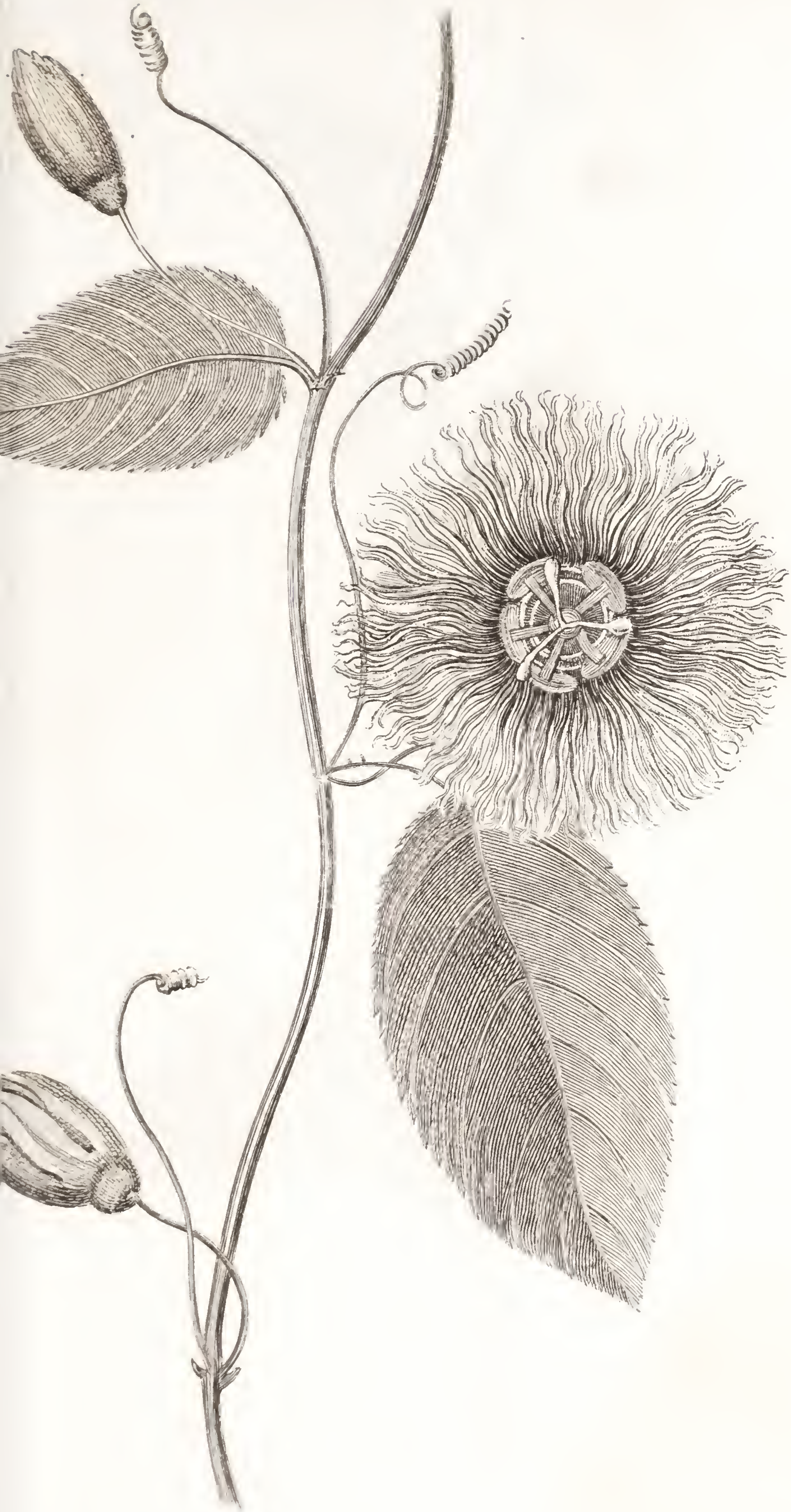
Passion Flower.

Species 3. Winged Paſsion Flower

Stem Square. Nectary closed.



Passion Flower.



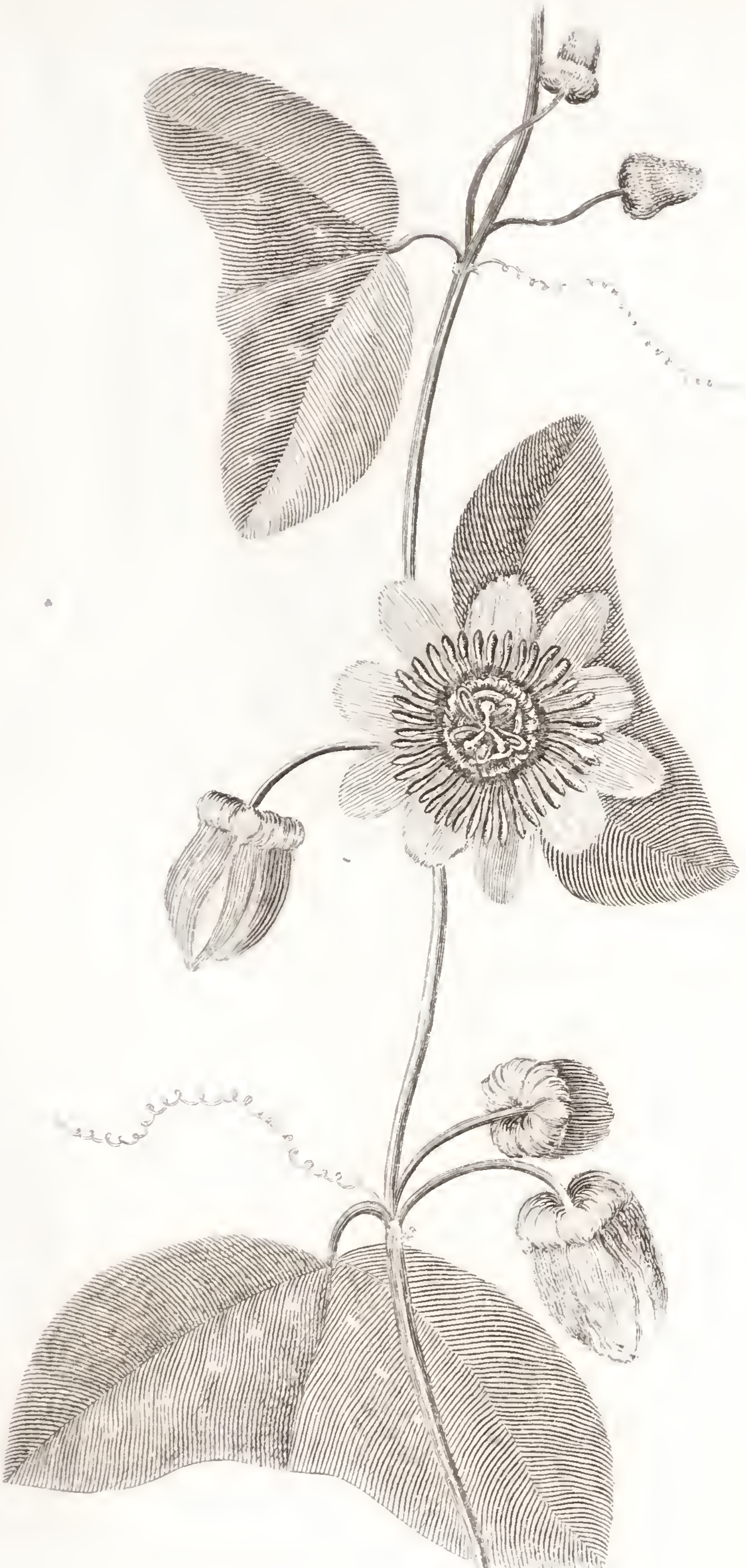
Species 4. The Serrated Passion Flower.

The border of the leaf edged like a saw

Mad el sculp

London Publish'd by Dr Thornton Sept 1 [illegible]

Passion Flower.



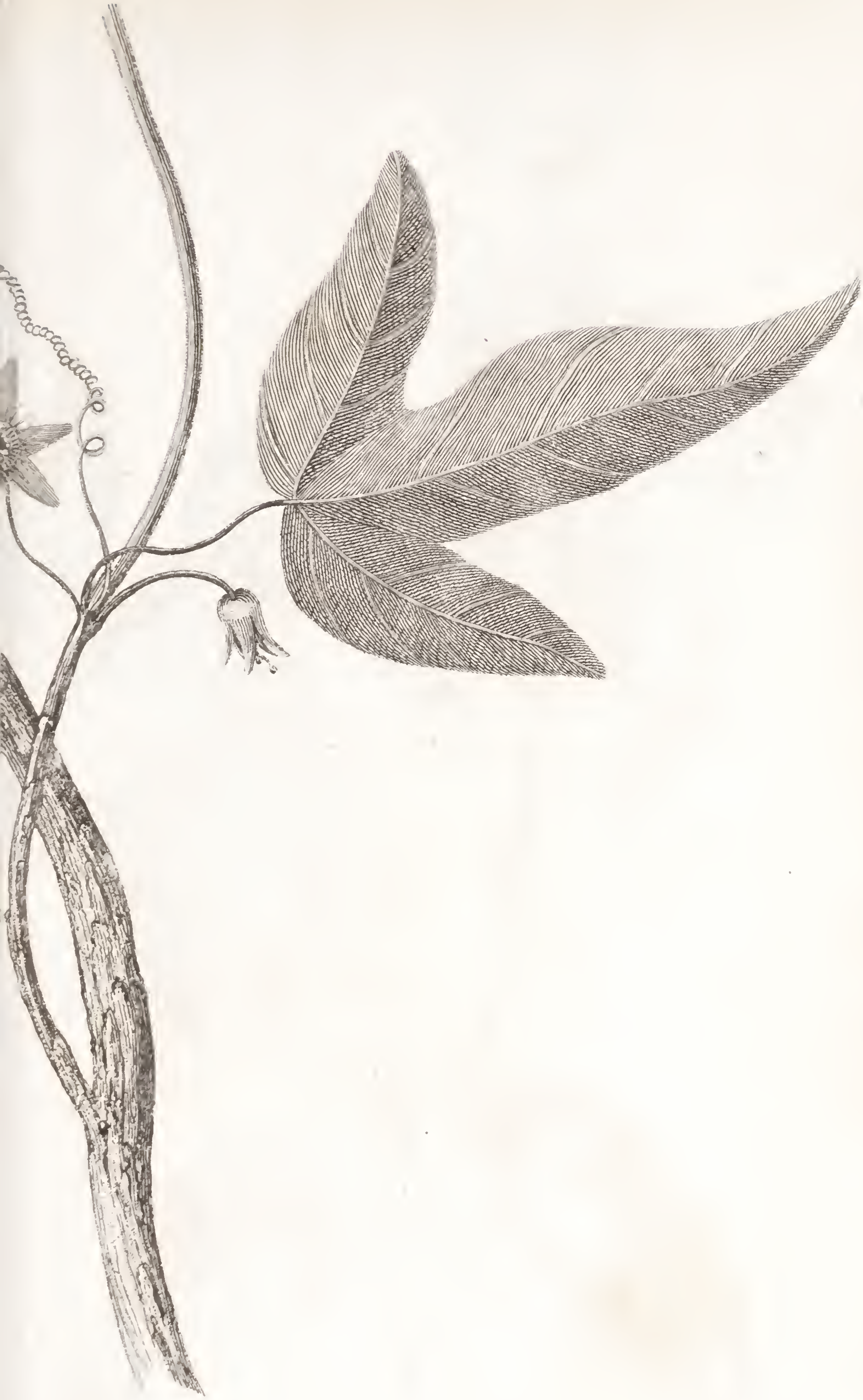
Species 5. The Dotted Passion Flower.

Dots in the leaf.

[illegible] sculp

London Published by R. Thornton Sept 1 1810

A Passion Flower.



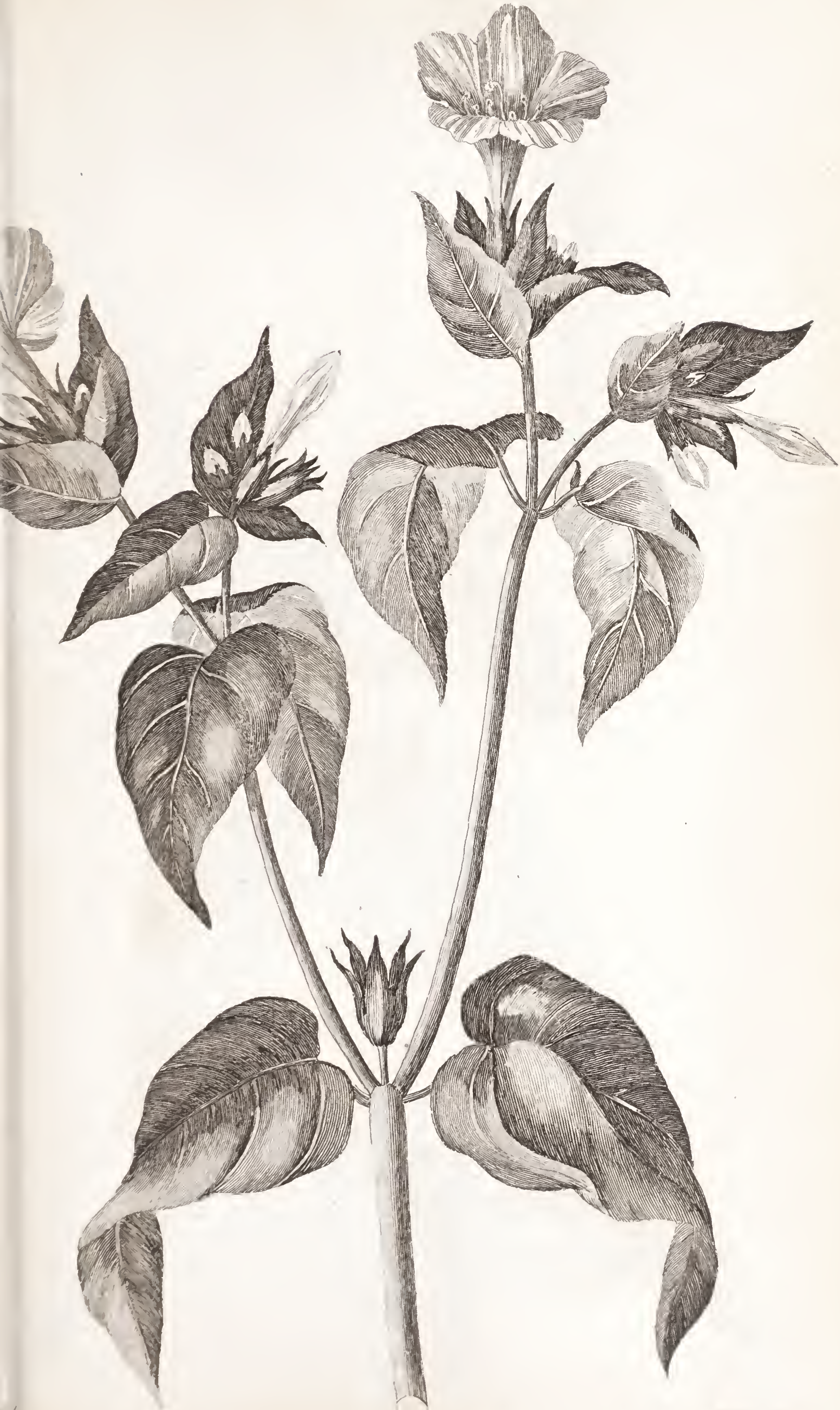
Species 6. The Cork Passion Flower.

Stem actually covered with cork.

Mazel sculp

London, Publish'd by Dr Thornton, Sept 1 1810

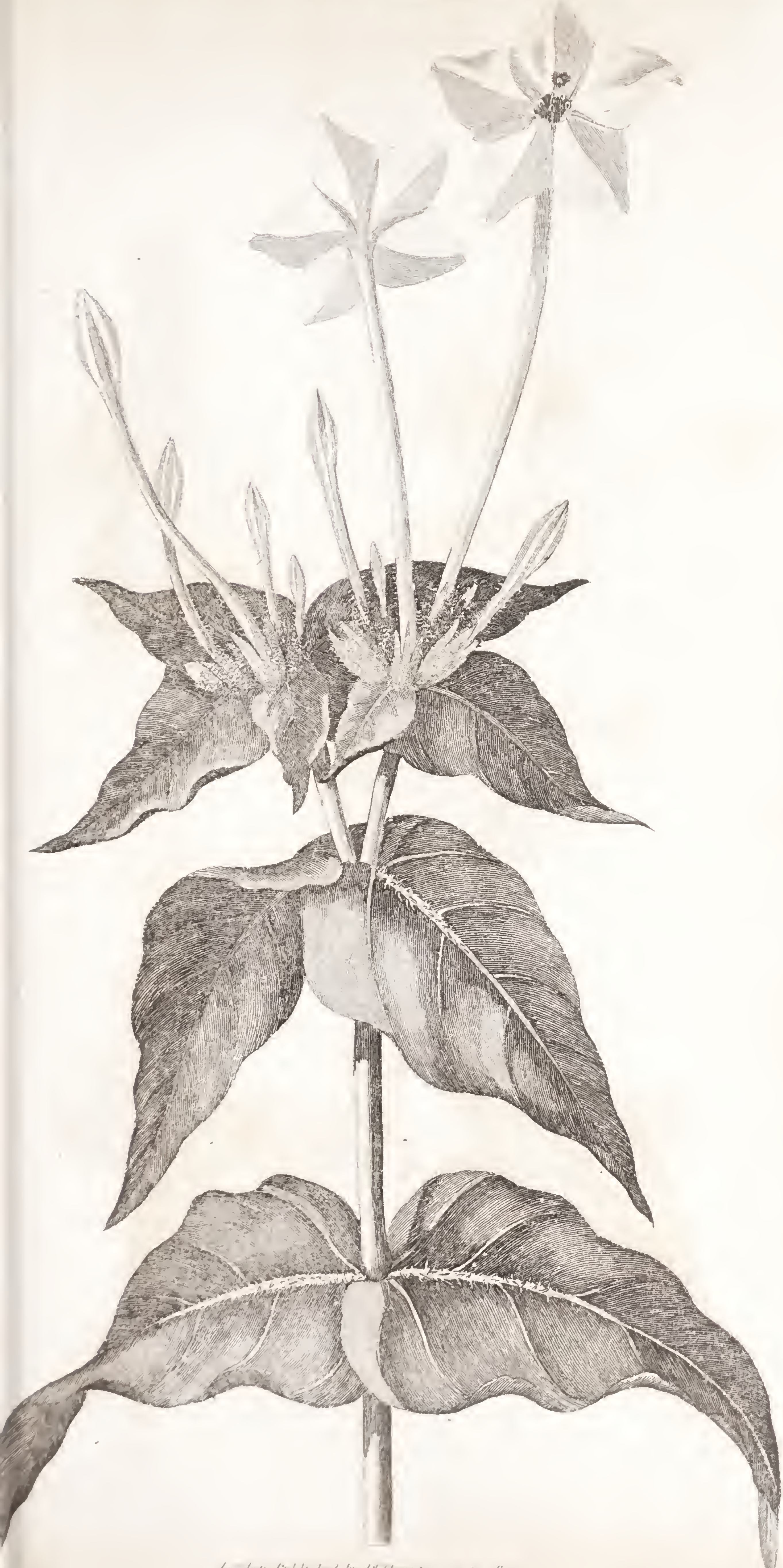
Species 1 Jalap Marvel of Peru.
Leaves peduncled. Flower having a short tube.



Mazel sculp

London Published by Dr Thornton Septr 1 1810.

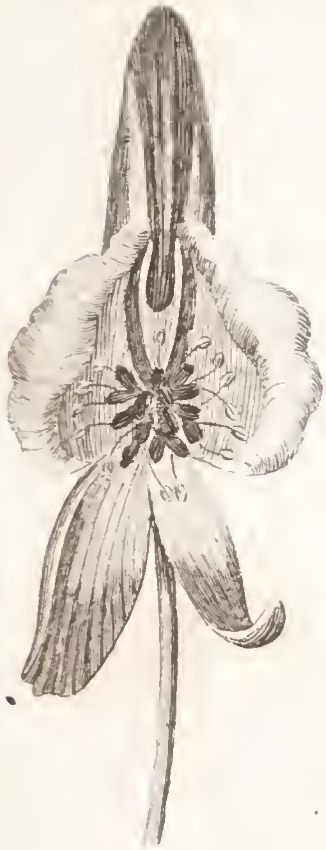
Species 2. Long Tubed Marvel of Peru.



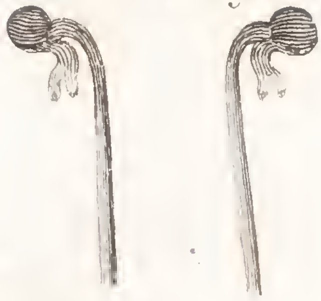
[illegible]

London Publish'd by [illegible] Sept 1 1810

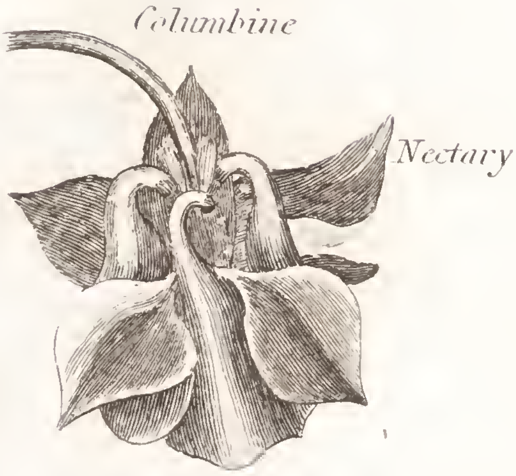
Monkshood



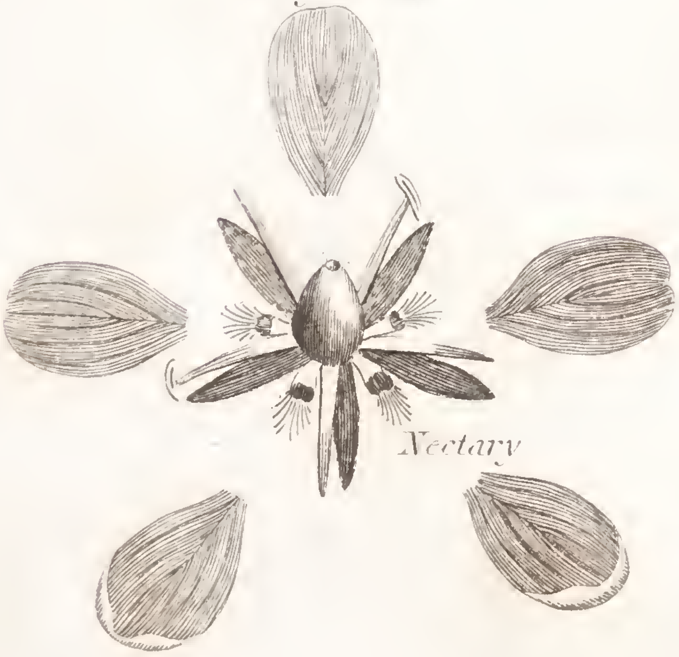
The Nectary



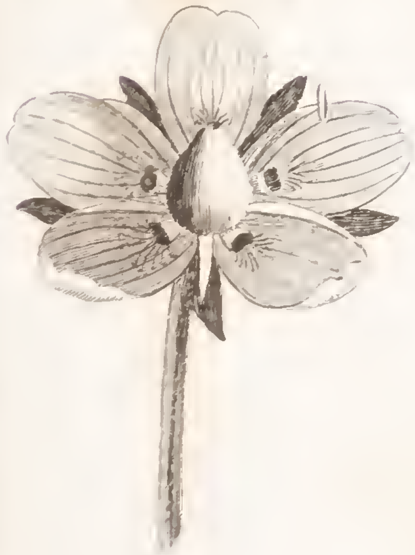
Columbine



Dº Diſsected



Parnassia



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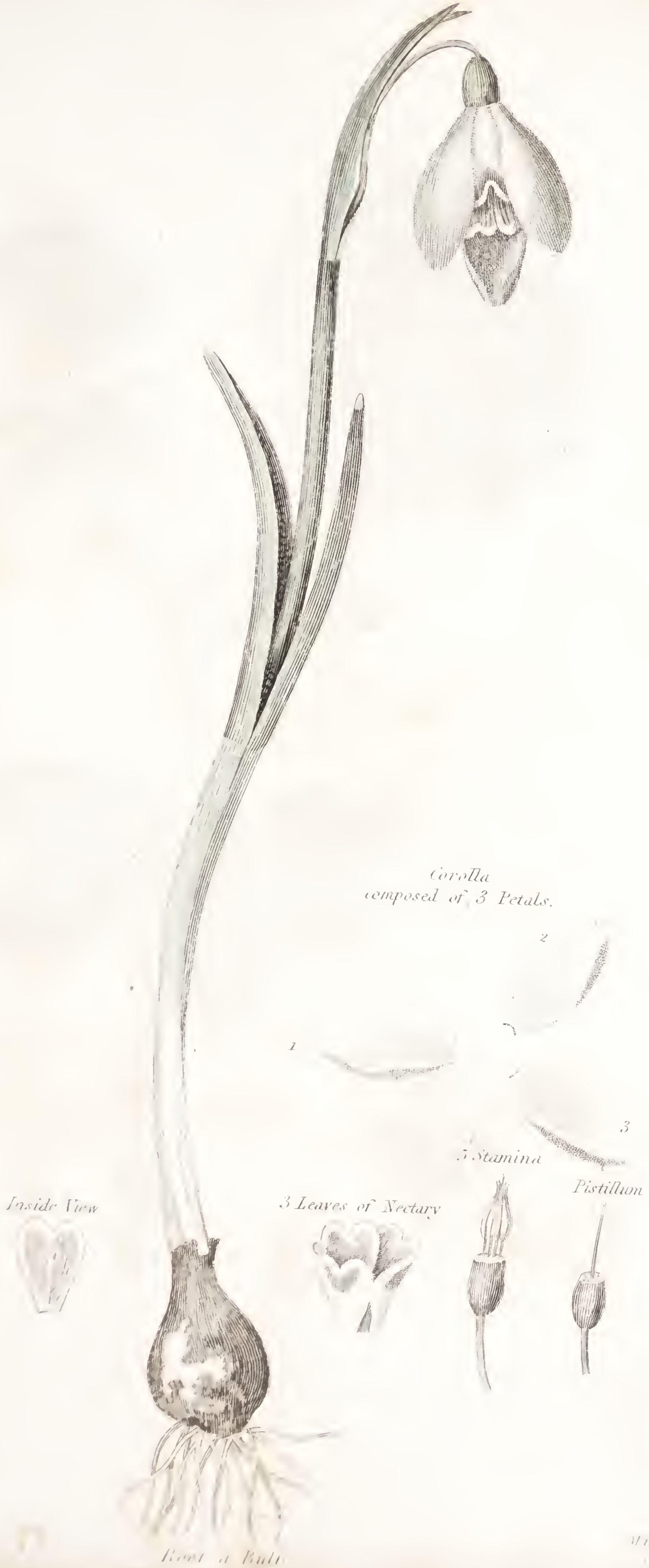
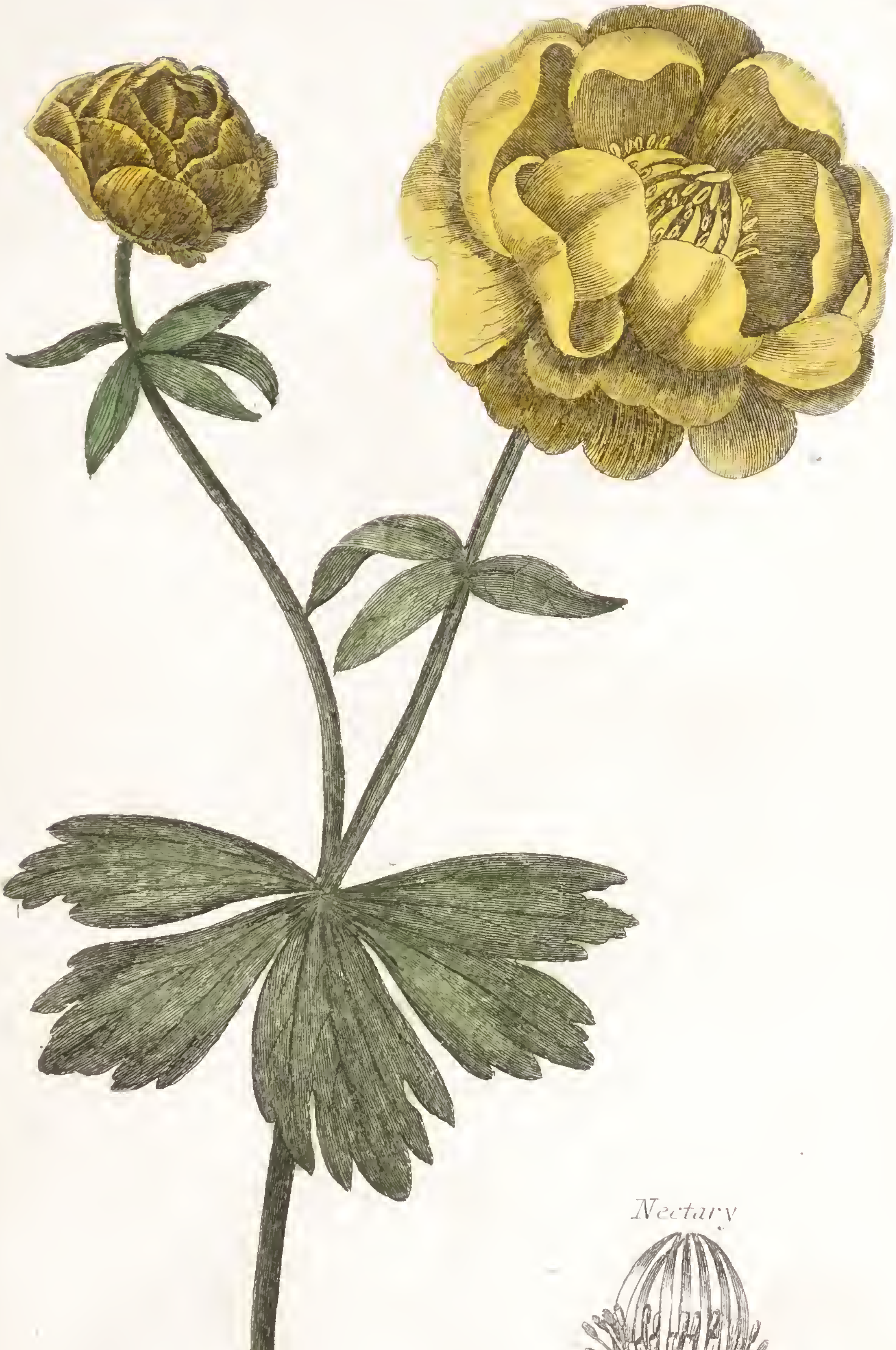
London, Published by D Thornton, Sept.r 1.1810

Snow Drop. Galanthus Nivalis.

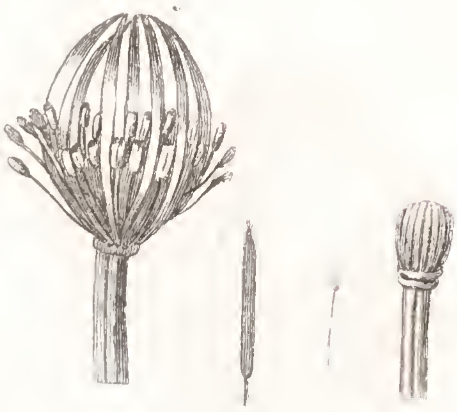


European Trollius. Pl:22

Trollius Eropæus.



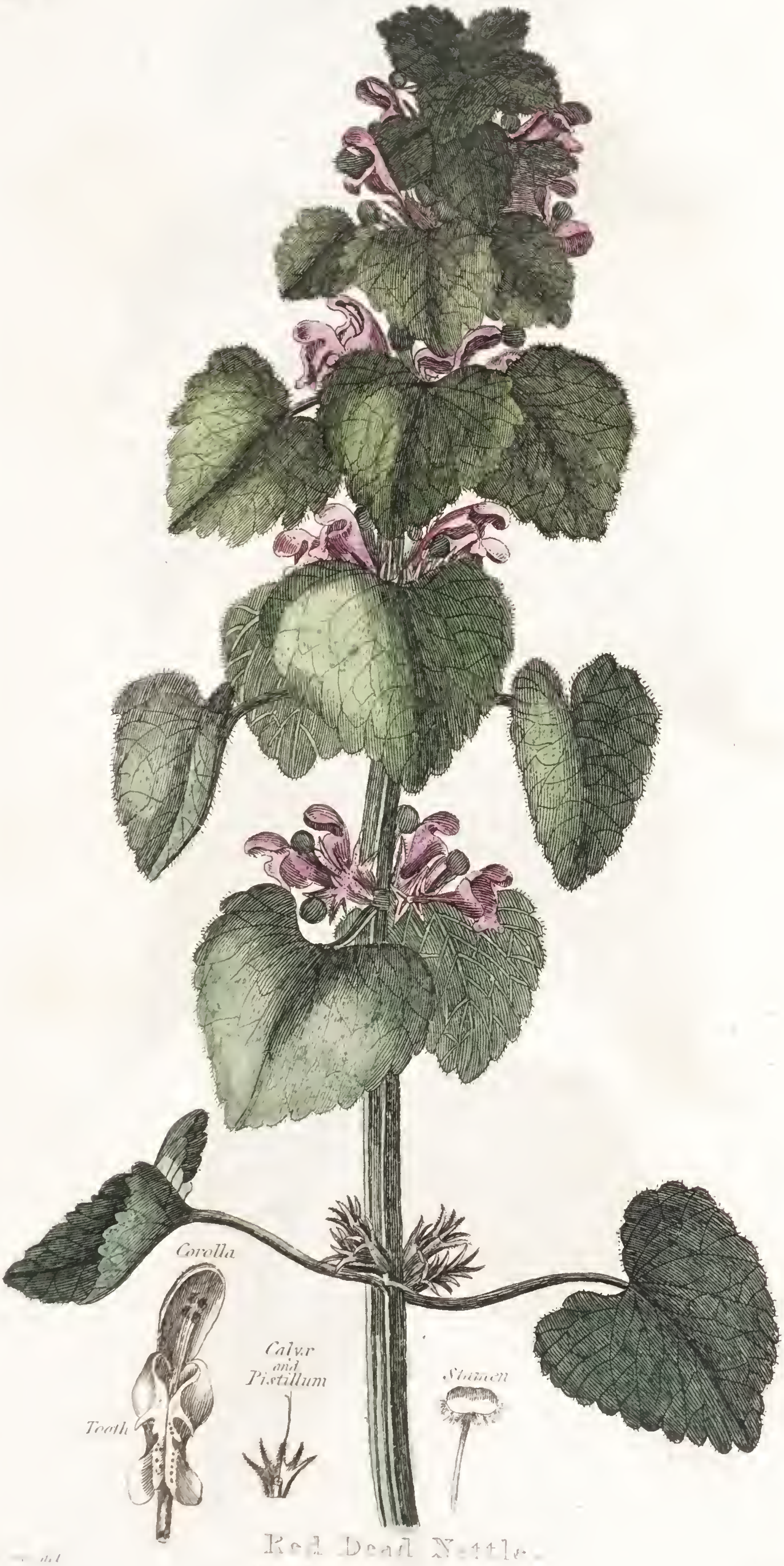
Nectary



Henderson del *Medland sculp.*

London, Published by Dr Thornton Aug.t 1 1810

Plate 23.

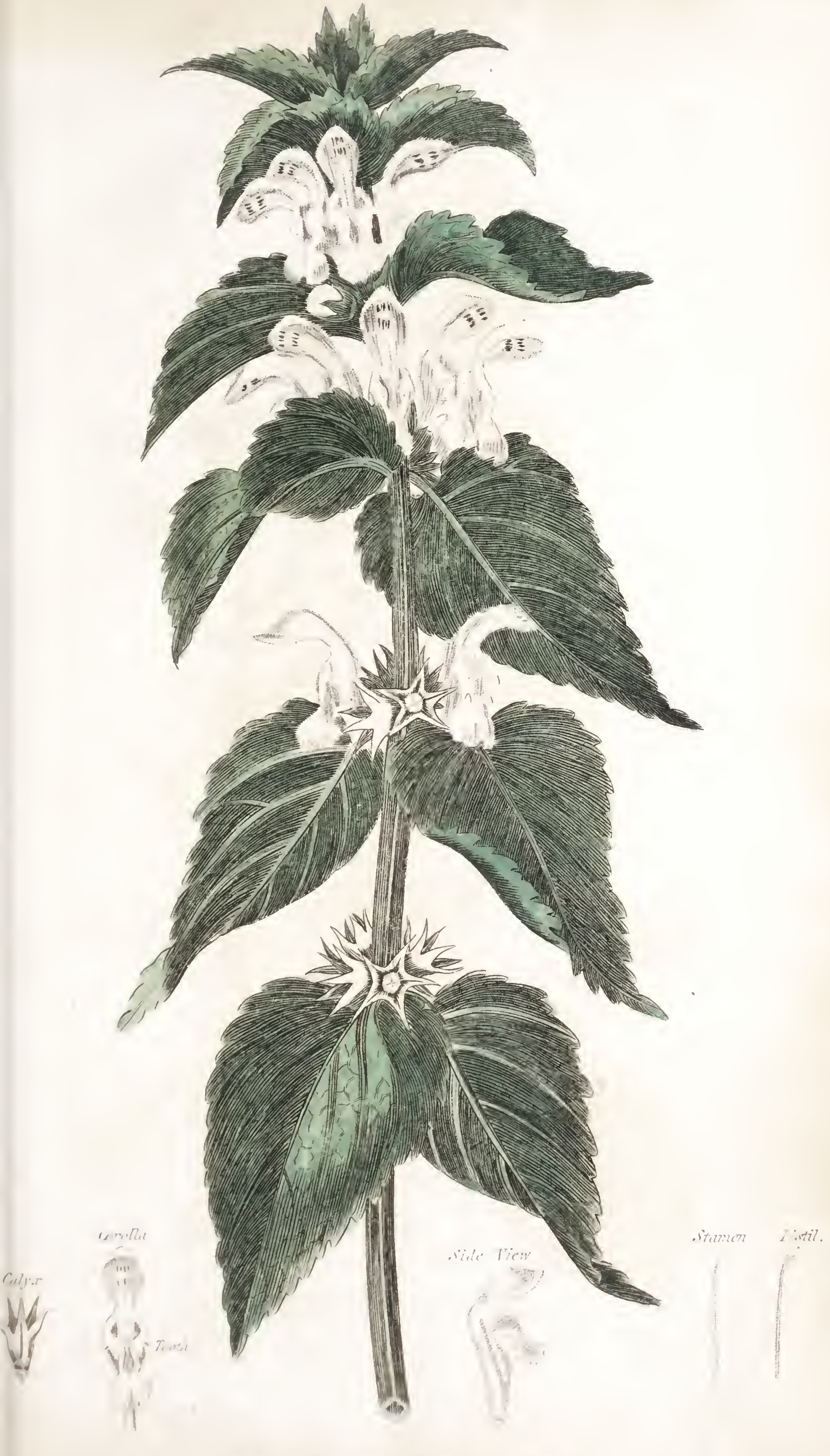


Red Dead Nettle.

[illegible] del

London Published by Dr. Thornton, Septr. 1 1810

Mazel [illegible]

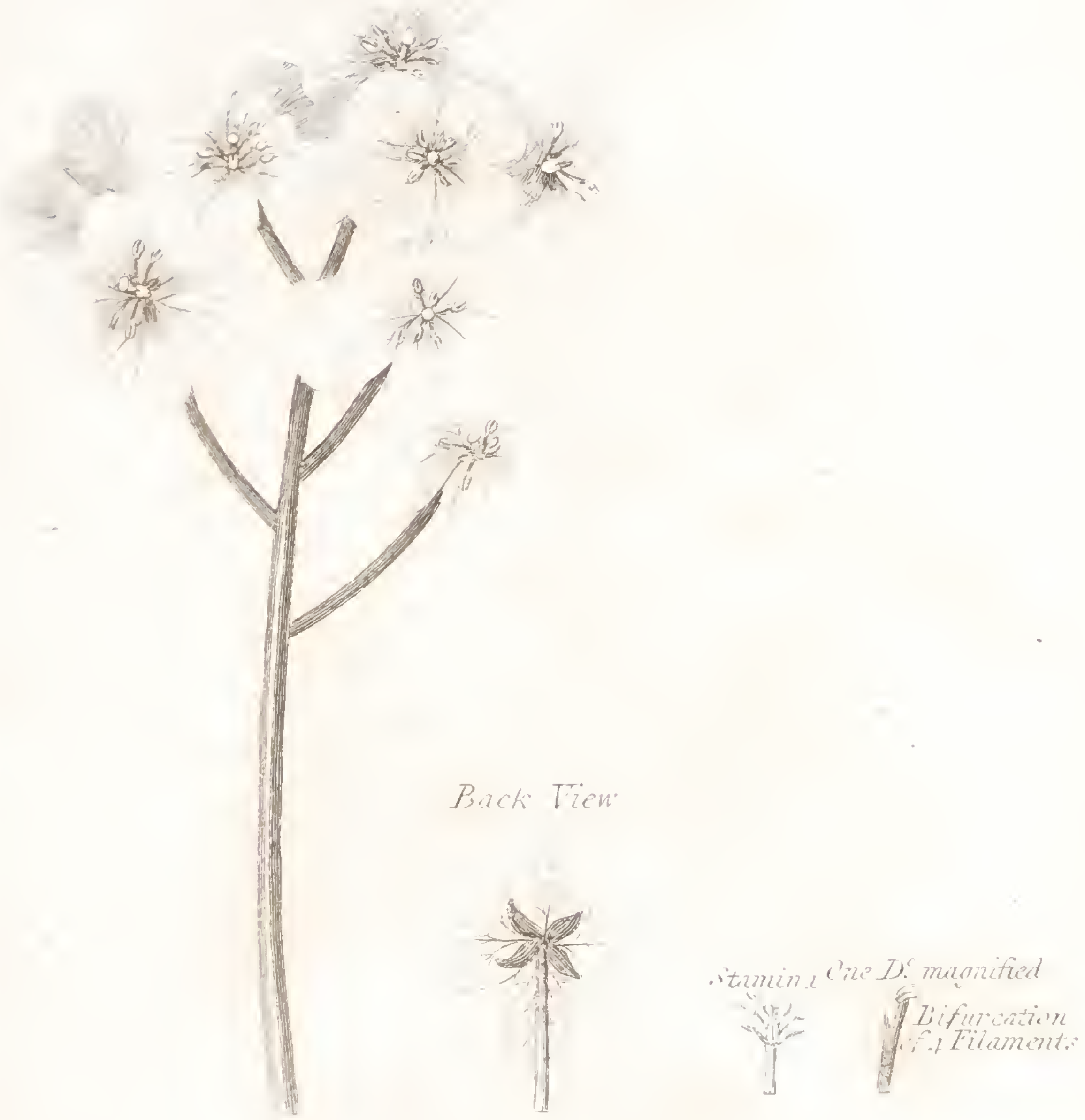


Lamium Album. White dead Nettle.

London, Published by D. Thornton Sep. [illegible]

Mazel

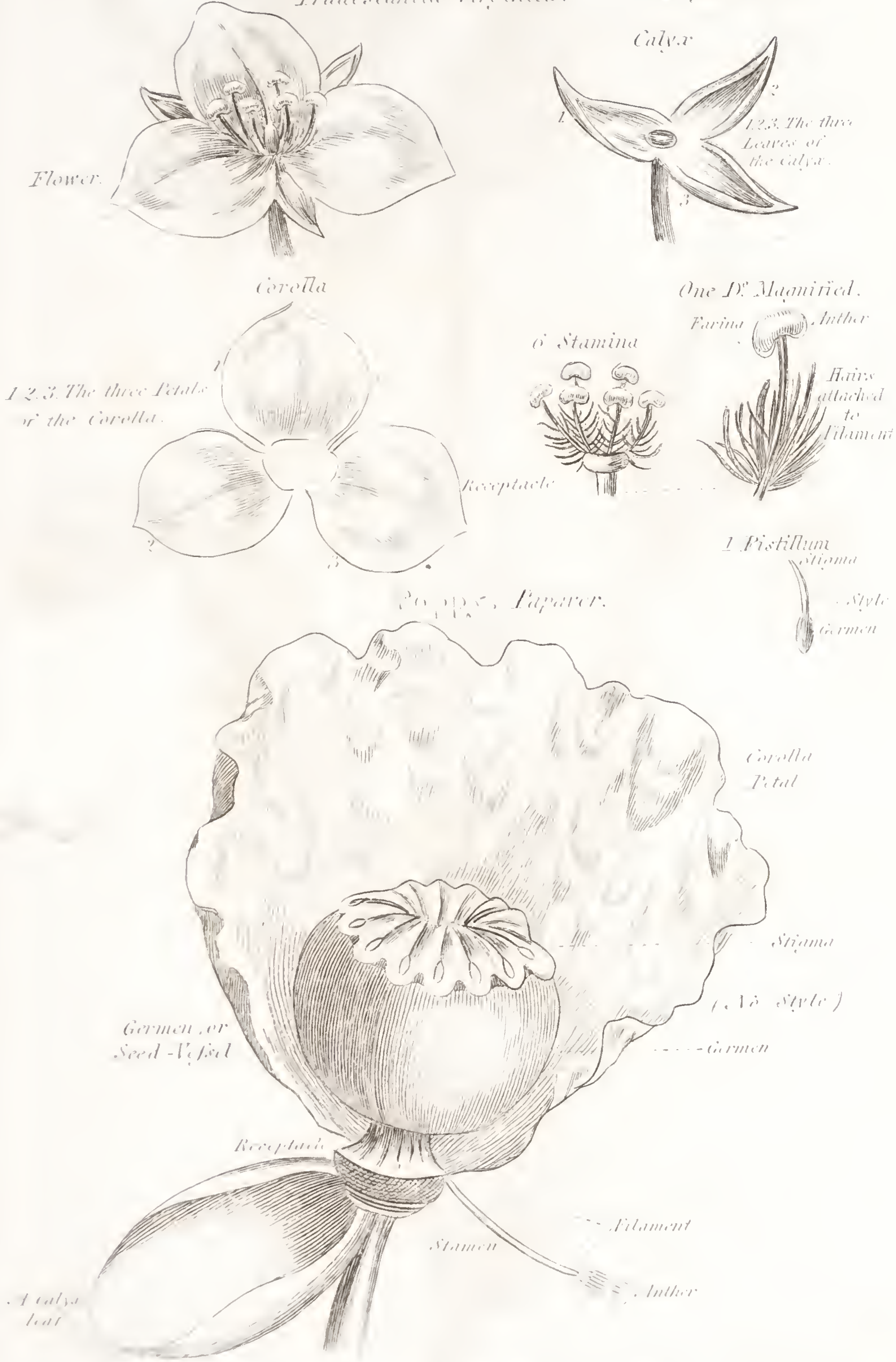
Sea Kale.
Crambe Maritima.



Mazel sculp

London Published by R. Thornton Aug.^t 1 1810.

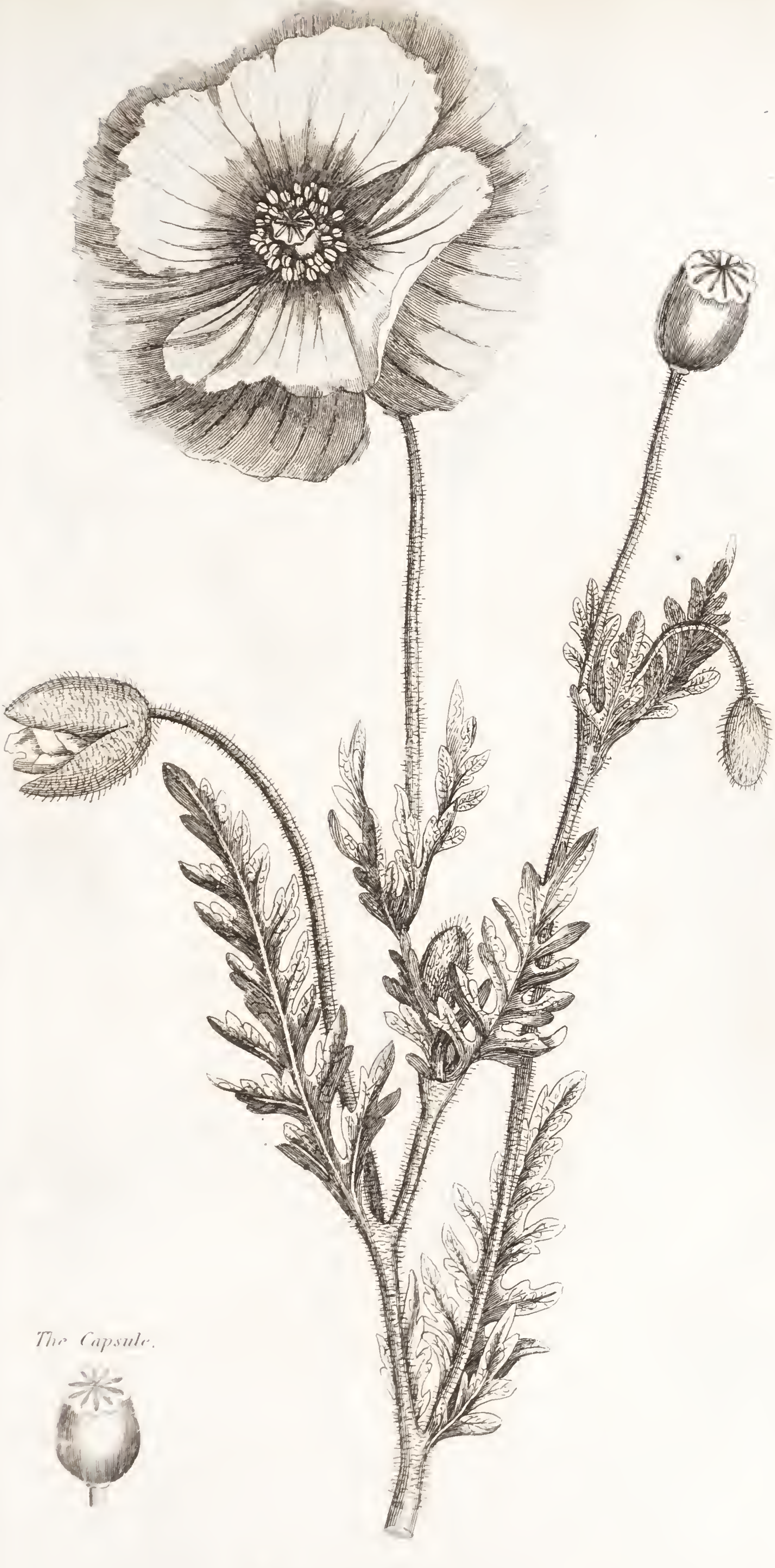
Spider-wort.
Tradescantia Virginica.



N.B. The Poppy has 2 Calyx Leaves 4 Corolla Petals 50 or more Stamina and 1 Pistillum

Henderson del.
M[illegible] sculp

London Published by D. Thornton Aug.t 1 1808.



The Capsule.

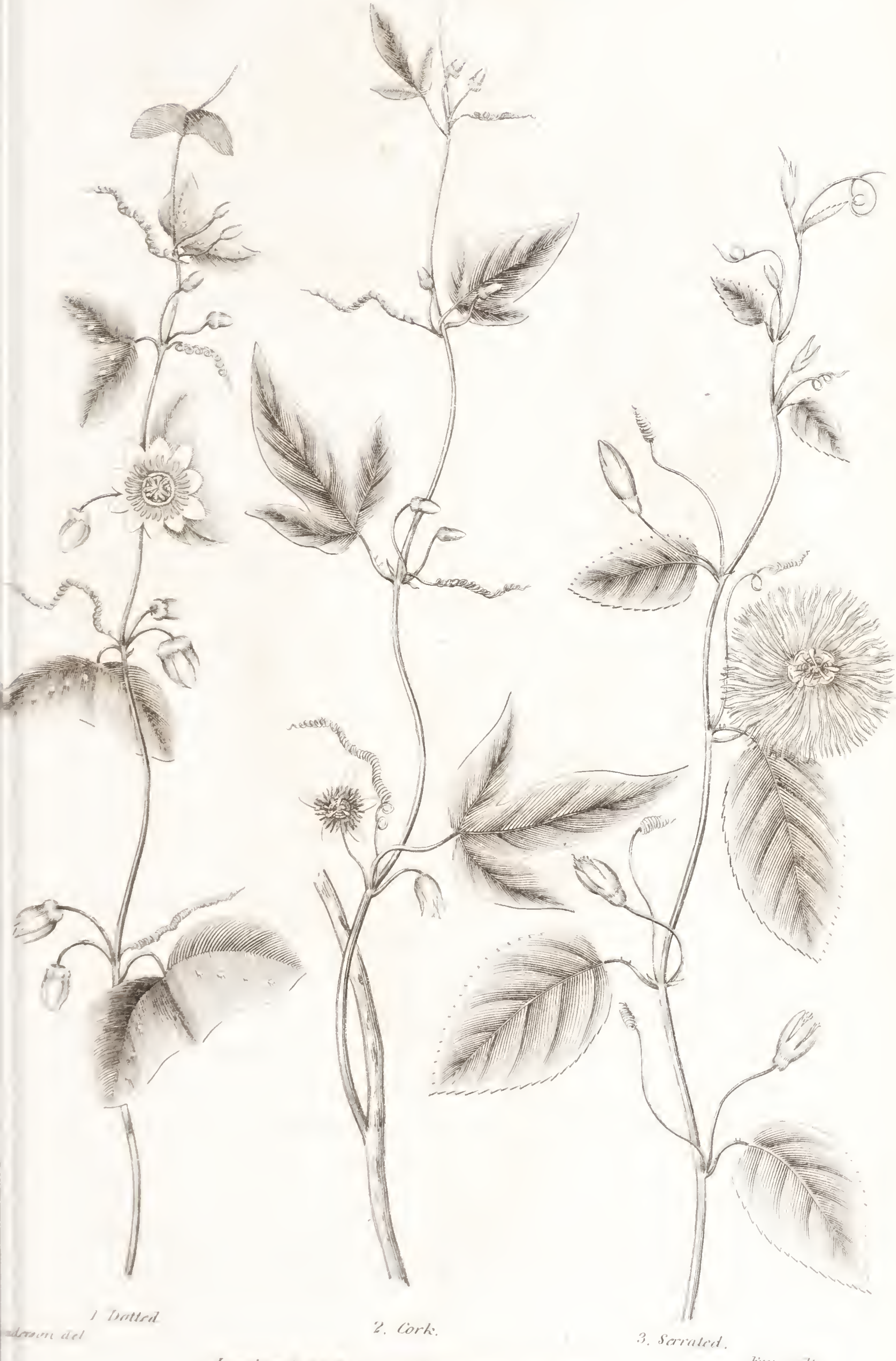
Papaver dubium,

Long-smooth-headed Poppy.

London, Published by D^{r} Thornton Augst 1 1810

Mazel sc.

Three Species of Passion Flower


1 Dotted
2. Cork.
3. Serrated.

nderson del

Eves sculp.

London. Published for Dr. Thornton Jany 1st 1812.

APOLOGY.

SOME apology is certainly necessary, after any endeavour to Reform so celebrated and established a System, as the *Sexual System* of the illustrious LINNÆUS. Many alterations in this system have been attempted. The enlightened pupil of LINNÆUS, THUNBERG, abolished the Classes XX. *Gynandria,* XXI. *Monœcia,* XXII. *Diœcia,* and XXIII. *Polygamia.* GMELIN, Professor at Gottingen, to the alterations introduced by Thunberg, in publishing a new edition of Linnæus's Systema Naturæ, added the abolition of Class XII. *Icosandria;* and the no less celebrated Dr. SMITH, preserving the rest of the System entire, has abolished Order V. *Monogamia,* in Class IX. *Syngenesia,* and Class XIII. *Polygamia.* "To his Class *Polygamia,*" says Dr. Smith, "many students of tropical plants *justly* objected in his lifetime, and he, as well as his son, listened to their observations." Dr. WITHERING, in his Arrangement of British Plants, has followed the system of Gmelin. Professor MARTYN, speaking of the changes introduced by SCHREBER, in his new edition of Linnæus's Genera Plantarum, says, that his reduction of Class XX. *Gynandria,* "appears *reasonable,* yet the singularity of the Order *Diandria* surely demanded a separate place to itself." But when he comes to mention the incorporation by GMELIN of the Class *Icosandria* into the *Polyandria,* he declares this change to be "*abominable.*"

I am aware, that venturing to Reform in such a degree the *Sexual System,* as I have done, will bring upon me, with some, much severe reproach. I am conscious, indeed, as well as others, that the credit of the *Sexual System* of Linnæus, as an *invention*, surpasses all power of praise, and hence has found enthusiastic admirers; and with timid hands I have ventured to take to pieces the *superstructure* he raised, and build up from the *old materials*, which I have *carefully* and *religiously* preserved, a NEW EDIFICE, suited to modern improvement and convenience; hoping, however, that those who may, hereafter, publish the works of Linnæus, will edite the Sexual System as delivered by himself, and not bring forward, in the works said to be those of Linnæus, what he never either thought or wrote. For a full defence of the *Reformed Sexual System*, vide my " British Flora, being a New Illustration of the Genera of Plants, with dissections of each Genus," where this subject has been particularly considered and discussed*.

In a word, as by system is only meant a plan to *facilitate* the acquirement of the knowledge of plants, the more easy this is contrived to accomplish the proposed end, the better such a system will be accounted; and I have endeavoured so to contrive this, that I hope no longer any very great obstacles can arise in the way of the student, and that this will plead my excuse with a discerning and indulgent public for venturing to step out of the beaten path, to attempt the *reformation* of a System which has conferred immortal honour upon the inventor, and received the general plaudits and admiration of the learned throughout Europe. It appeared to me more advisable to *reform* the whole, than to make any *partial amendments;* either to adopt the system as delivered to us by Linnæus, or to have the present system, as erected out of materials of the old; a *system* which I hope may not moulder, like the other systems,* into the sand of which they were composed, but may resemble the youthful PHŒNIX arising from the ashes of its parent, and like a rock in the midst of the ocean, remain until "the wreck of matter and the crush of worlds."

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* In this work British Plants are classed after our *Reformed System*, and it is hoped the science of Botany is thereby more easily attained. This Book is principally designed as an introduction to that work.

It is certainly a great satisfaction for me to find, that although the learned and venerable *Professor* MARTYN has long openly disapproved of the changes made in the Sexual System by the several Reformers, yet he writes to me—

Extract of a Letter to Dr. Thornton, from Professor Martyn.

"I by no means *disapprove* of *your new* attempt to render the Sexual System by the manner in which you have done it, an *easier medium* of attaining *a knowledge of Plants;* and have been long convinced in my own mind, that we strive in vain to unite a *natural* with an *artificial arrangement.* Upon *your plan,* I see *no impropriety* in bringing the ORCHIDEÆ into the *Second Class;* nor can I even *object* to your *altering,* as you have done, the separate classes of Linnæus, ICOSANDRIA and POLYANDRIA. Your *method* is ably considered throughout; for along with *you* I hold our great Master's System as *sacred*, and can never approve of those *greater alterations*" (he might have said *mutilations*) "which some of his pupils have made, so differently is to be estimated the conduct of persons engaged in the same object."

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* Sixty-three Systems of Botany have appeared!

The Rev. Doctor Milne, the learned author of "*A Botanical Dictionary*," writes to me thus—

Extract of a Letter to Dr Thornton, from the Rev. Dr. Milne.

"Your *Reformed Scheme* of the *Linnæan System*, has my *entire approbation.* It possesses all the admirable and elegant simplicity of that of Rivinus, which has always been a great favourite with me, from the steady adherance of the author to the Principles of his Method, and is eminently adapted for *practice.* Your Remarks respecting the *Sexual System* are truly excellent;—your improvements on that System admirable. In a short time your's must be the prevailing System."

Doctor Shaw, of the British Museum, a gentleman not less eminent as a botanist, than a naturalist, declares, "that he believes, had Linnæus been alive, the *Reformed Sexual System* would be that which he himself would have instantly adopted."

Similar are the flattering opinions also of several other *distinguished botanists*, who have expressed their approval of the *Reformed Sexual System.* But with extreme diffidence I submit it to the judgment of the world.

HOW

TO EMPLOY

THE

REFORMED SEXUAL SYSTEM.

IT was our intention to have given "the *Genera of Plants*" on the large, useful, and magnificent scale, seen in several tables, taken from our "*Philosophy of Botany*," but owing to the *unchristian* spirit of one man, who has made the earth a wilderness, and for a time trampled down the *fine arts*, we have been obliged to conform to the circumstances he has produced, and we take this opportunity to inform the reader, that in our smaller work, entitled "the BRITISH FLORA, *being a new Illustration of the Genera of Plants, arranged after the Reformed Sexual System*,"* will be found all the genera distributed according to this improved System; a work which we are happy to say has met with the approbation of Professor MARTYN and Doctor SMITH, and which, though less splendid than our first intention, may be more *generally* useful.

A full apology for the innovation in the Sexual System of Linnæus may be seen in that work, with a defence of the same at the head of each class. The indulgent reader will, if offended, forgive the alteration made, when he recollects that it is most frequently but a tranposition of words, which would restore back this *Reformed System* of ours to the *original one* of the great founder. All botanists to whom our system has been hitherto shewn, have given it a decided preference, but it is introduced into the world with great humility.

EXPLANATION

OF THE

WORDS, CLASS, ORDER, AND GENUS.

Nisi vegetabilia in *Ordines* redigantur, et velut castrorum acies distribuantur in suas *Classes*, omnia fluctuari necesse est.—CÆSALPINUS.

THE number of Plants formed by the omnipotent and all-wise CREATOR are so vast, that without the aid of *method*, the mind of man would be overpowered by this profusion in the bounty of GOD, and he could only imperfectly treasure up in the storehouse of his brain the various beings of the vegetable race. But by the aid of *method* the difficulty arising from *number*, is in a great part obviated.

The student, when examining any plant, has to settle, which has been before explained,

1st, THE CLASS,
2dly, THE ORDER,
AND THEN
3dly, THE GENUS;

Which *three advances* in the SCIENCE OF BOTANY it is of the utmost importance to well understand.

Other sciences also have recourse to the aid of art, and as the ladder is contrived to mount up with facility to a great height, so we rise to the acquisition of science step by step.

For example, let us take *Astronomy*, and we shall find that the philosopher has invented two hemispheres, the northern and the southern, divided by the ecliptic circle; and the stars are situate in one or the other of these two hemispheres. He next has fancied figures in the heavens, which are called *Constellations*, which mean a cluster or assemblage of certain stars, and this greatly facilitates the acquirement of *Astronomy*. (*Vide* Plate 1, page 82.) So the *Botanist* has also his greater divisions, or *Classes*: his smaller divisions, or *Orders*; and thirdly, his subaltern divisions, his *Genera*, or assemblages of plants, all which agree in certain characters, and these possess one common appellation; for otherwise the memory must have been over-burthened with names.

It is the same as respects the appellation of persons, as the several *Family Names*, and some have instead of using the term *Genera of Plants*, called these assemblages by the title, "*The Families of Plants.*"

The most common observer has not failed to notice the different sorts or kinds of Roses constituting one *family*; as the common *Dog Rose* of the fields, and the garden *Moss Rose, &c.* (*Vide* Plates 2 and 3).

Thus the several species of *Geraniums* naturally arrange together, constituting one GENUS, all agreeing, if not in the character of the Corolla, in that of the

Germen, which resembles in each a *Crane's-bill;* hence its appellation. (*Vide* Plates 4, 5, 6, 7, 8.)

The different sorts of RANUNCULUS all agree in having a *Nectary* at the base of the unguis of the Petal; hence one common appellation, or generic name. (*Vide* Plate 9, 10.)

The *Pheasant's-eye*, ADONIS, is not a Ranunculus, only as wanting this *generic* character. (*Vide* Plate 11.)

Thus the several *Passion Flowers* all agree in a curious formed *Nectary*, and the same classical character; the stamina being five, beneath, and the nectaries in each species rayed. (*Vide* Plates 12, 13, 14, 15, 16, 17.) And each genus, or family, contains a greater or less number of species: thus we have two *Marvels of Peru* (MIRABILIS), varying in the length of the tube, &c. (*Vide* Plates 18, 19.)

The Utility of System explained.

ORDER or arrangement, is the life of every thing, and will be found to exist in all the rational concerns of men.

Thus, the *Year* is divided into *Months*, and these again into *Weeks*, and this last into *Days*.

Thus, an *Army* is composed of *Regiments*, these are divided into *Companies*, and this last is subdivided into still smaller divisions.

But the comparisons which we would prefer to all others, as being the most familiar and obvious, is that Division which obtains in *Geography*.

The *World* is divided into four *Continents*,—*Europe*, *Asia*, *Africa*, and *America*.—If we take *Europe* for example, we shall find this is also subdivided into *Kingdoms*, as *Great-Britain*, *France*, *Italy*, *Germany*, &c.; and if *Great Britain*, we shall find that this is composed of *England*, *Wales*, *Scotland*, and *Ireland*,—and any of these parts again into *Counties* or *Shires*, and these into *Parishes*, and *this last* into *Towns* or *Villages*,—and *these* have likewise their *Subdivisions*.

Suppose now, a letter be directed to DOCTOR THORNTON, No. 1, *Hinde-Street, Manchester-Square, London,* sent from America.

It is brought at once to *London,* instead of *Dublin, Edinburgh, Paris,* or *Berlin.* Being arrived in *London,* it is then given to the *Postman* whose department is *Manchester-Square,* who readily brings it to me in Hinde-Street.

Thus it is, that, having any Scientific Work, suppose our BRITISH FLORA, in which plants are arranged in their *Classes, Orders, Genera,* and *Species,* the names of unknown plants may be as readily found out by one acquainted with *Botanical Language,* as a *Postman* brings me a letter sent from abroad; but to accomplish this, we must have first well acquired, 1. The CLASSES, 2. ORDERS, 3. The GENERIC, and, 4. SPECIFIC CHARACTERS of Plants, whereby this *desideratum* is accomplished.

For instance, suppose a person instructed in Botany were to meet with the ACONITUM, *Monk's-hood* (Plate 59), he would find it, by dissection, of Class XIII. Polyandria, Order III. Trigynia, and of this particular CLASS and ORDER, there are only *two* plants in the whole world, viz. the *Monk's-hood* and *Larkspur,* and by comparing the *genuine characters* of the two, the former having a *pedicelled Nectary,* which the other has not, he would have at once discovered the *scientific name* of the plant.

THE

FACTITIOUS, ESSENTIAL, NATURAL, SECONDARY,

AND

SPECIFIC CHARACTERS.

The reader will meet, in scientific Works, with five kinds of characters, which it is necessary, in order to become a Botanist, well to understand.

I. THE FACTITIOUS CHARACTER.
II. THE ESSENTIAL CHARACTER.
III. THE NATURAL CHARACTER.
IV. THE SECONDARY CHARACTER.
V. THE SPECIFIC CHARACTER.

1. The *FACTITIOUS CHARACTER* is employed in Tables to discriminate all the *genera* falling under each particular *Class* and *Order*. (*Vide* our British Flora.)

2. The *ESSENTIAL GENERIC CHARACTER* comprehends all the distinctions requisite to discriminate any *genus* from all the other genera in

the world. As the multitude of *genera* is great, amounting probably, if we consider the *families of plants* distributed throughout the world, to considerably more than 2000, it became necessary to make *short* distinctions, characteristic of each tribe or *genus*, and to seize upon such peculiarities as are sufficiently striking, and run through each species of the same genus,

The beauty and perfection of these Essential Generic Characters consist in a clear concise discrimination of *each genus;* and, in order to contrast the better such *Essential Generic Characters*, these should be also included in *Tables*, or printed in a somewhat Tabular form.

These distinctions are frequently very perspicuous, attended with considerable beauty, although founded often upon some very minute consideration.

Thus, as was explained before, (p. 80.) the *Rose* is discriminated by its *urceolate pericarp*, crowned with a fringed calyx; the *Geranium*, by its *seed-vessel* having the resemblance of a *crane's bill;* the *Ranunculus* by its *scale* at the unguis of each petal of the corolla; the *Passion Flower* by a radiated nectary, and *Marvel of Peru* by its funnel-form corolla.

To this we might add the more striking *Essential Generic Character* of the *Monk's-hood*, having a pedicelled nectary, each filament bearing at the top the form of a *dolphin;* that of the *Columbine*, whose *nectary* resembles a *nest of doves;* that of the *Parnassia*, fringed, each hair terminating in a gland (*Vide* Plate 20); that of the *Snow-drop*, resembling three heart-shaped leaves, beautifully marked with green (*Vide* Plate 21); and the many linear petal-like nectary of the European *Trollius* (*Vide* Plate 22); and for more minute characters, the small teeth running through each species of the genus *Nettle*, by the side of the lower lip (*Vide* Plates 23, and 24); or the bifurcation of four filaments in the *Sea Kale* (*Vide* Plate 25).

Thus the small hairs on the filaments of the *Spiderwort*, and the crowned germen of the *Poppy*, form their generic character (*Vide* Plate facing Page 1). Other examples, sufficiently striking, will present themselves in almost every page of our "BRITISH FLORA*," to which this book is meant as an introduction.

3. The *NATURAL GENERIC CHARACTER* is a careful description of all the parts of the fructification, as the *Calyx*, *Corolla*, *Stamina*, *Pistilla*, *Pericarp*, and *Seed;* and this was what Linnæus particularly prided himself in, and it is here he has displayed his Lyncæan mode of investigation; and although such a particular description will not constantly apply to all the species, it still has very considerable merit, and deserves every attention.

4. The *SECONDARY GENERIC CHARACTERS* relate to those considerations which rarely indeed agree with all the species, and hence are called *Secondary;* as the *Stem*, *Leaves*, *Flowers*, and *Habitation;* yet these considerations certainly often greatly aid in the investigation of the *Genera* of plants.

---

* We have introduced these *Factitious*, *Essential*, *Natural*, and *Secondary Characters* in our BRITISH FLORA, being an Illustration of the Genera and Species of British Plants."

5. The *SPECIFIC CHARACTER.* The preceding observations are sufficient for our knowledge thus far (viz. to know Class, Order, and Genus); but as the *Secondary Generic Characters* are founded on other considerations than the *flower*, as well as the *Specific Characters*, it is necessary that we should advance in our pursuit of Botany.

This is done in the Second Volume of this work, in which all the Terms of Botany are explained, and illustrated by proper examples.

ELEMENTS

OF

BOTANY.

PART II.

TERMS OF THE SCIENCE.

BY

R. J. THORNTON, M. D.

MEMBER OF THE UNIVERSITY OF CAMBRIDGE, AND OF THE ROYAL
LONDON COLLEGE OF PHYSICIANS, &c. &c. &c.

VOL. II.

London:
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1812.

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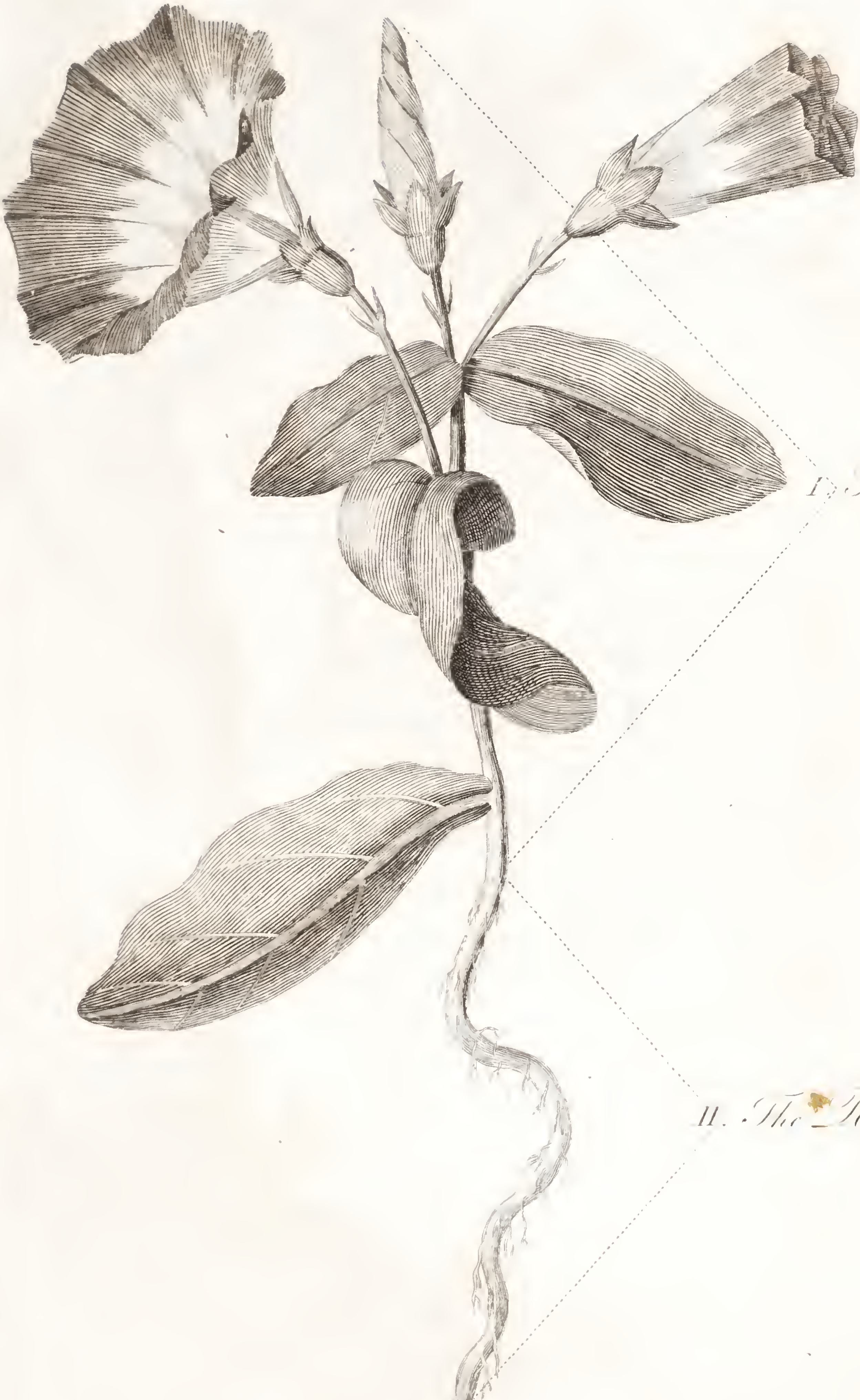

I. The Tra

II. The Root.

Convolvulus.

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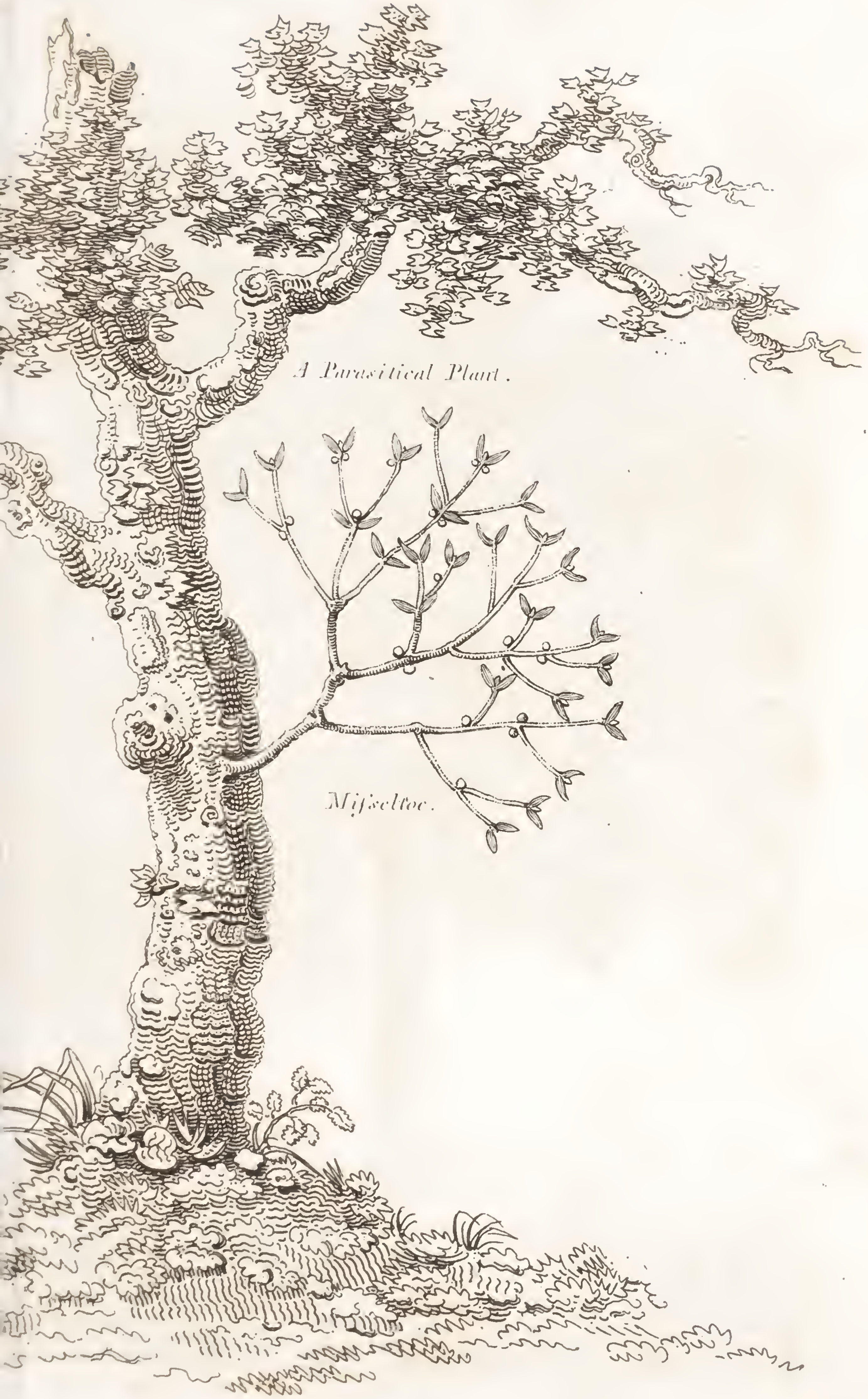
Thomson



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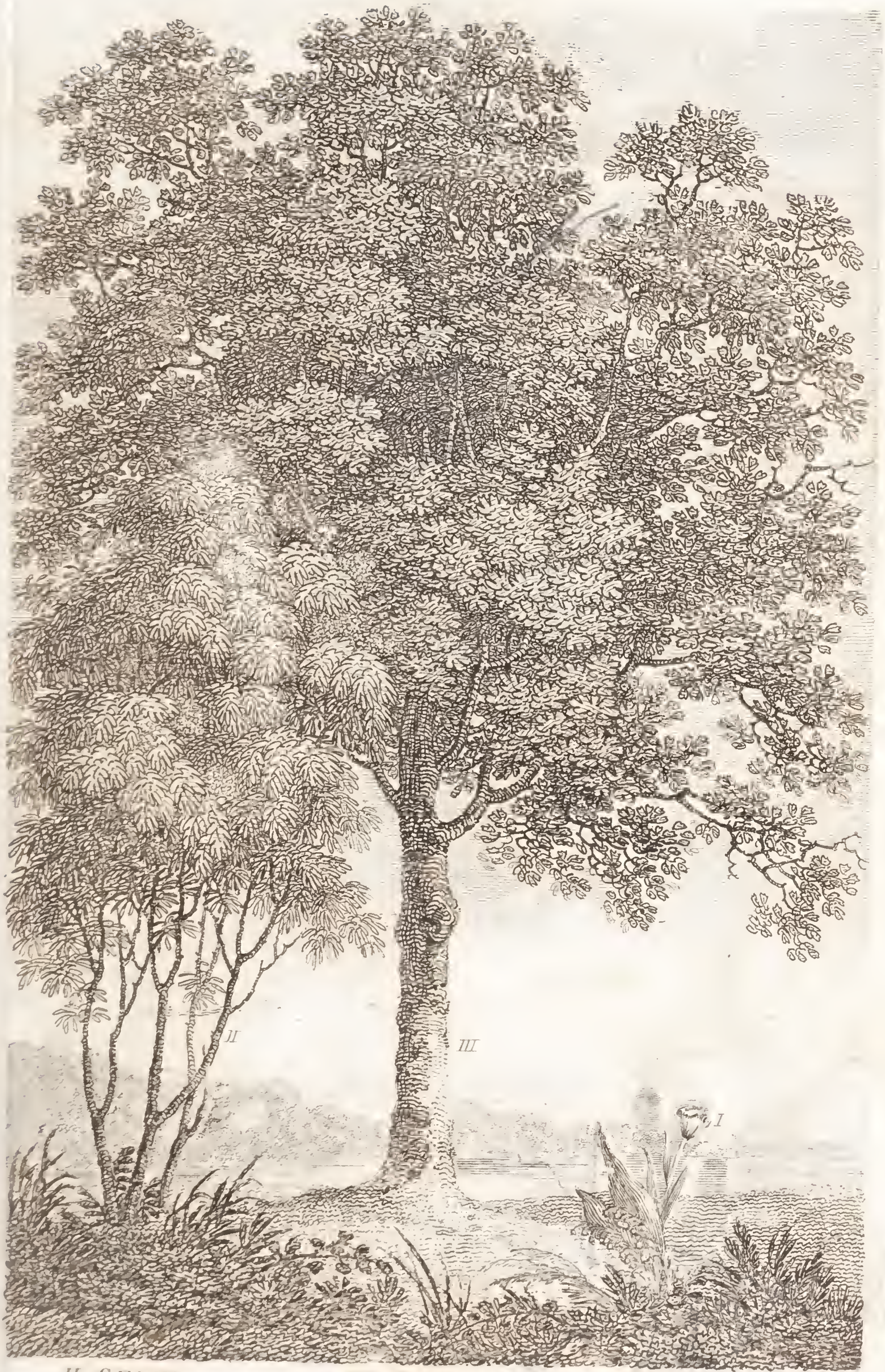

II. SHRUB. III. TREE. I. HERB.

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ROOTS.

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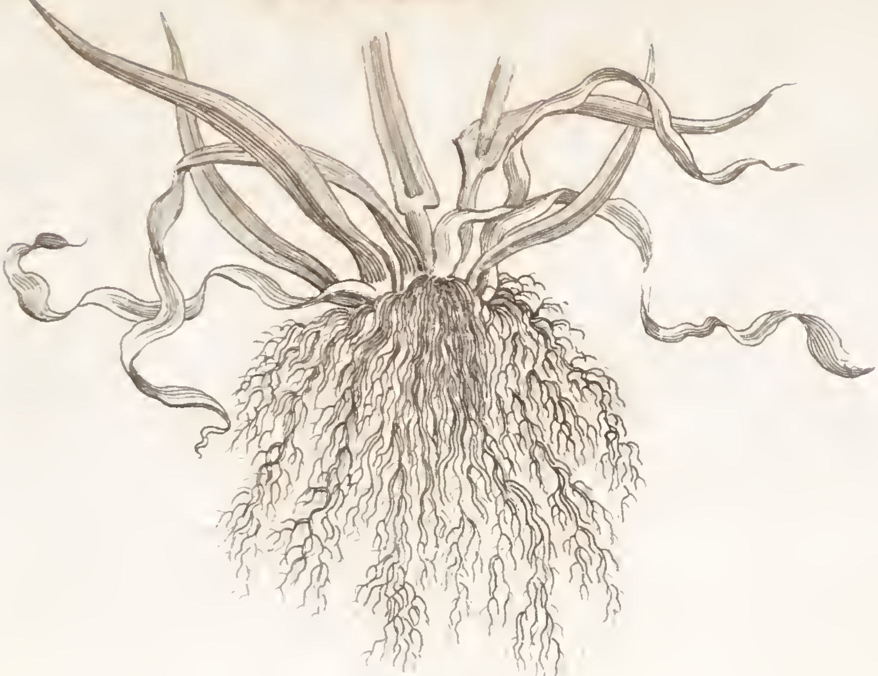

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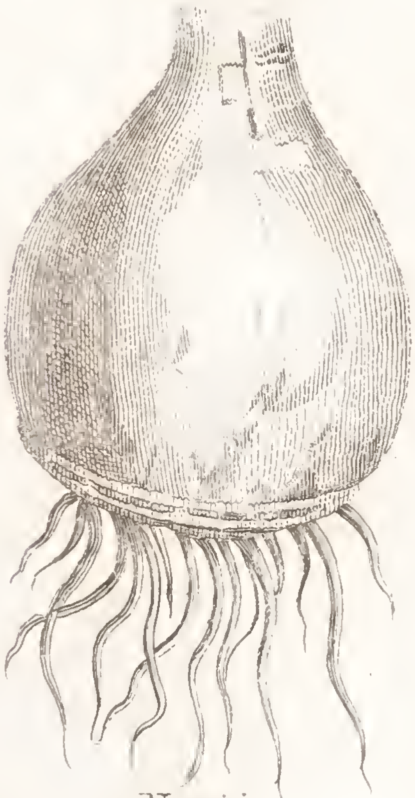

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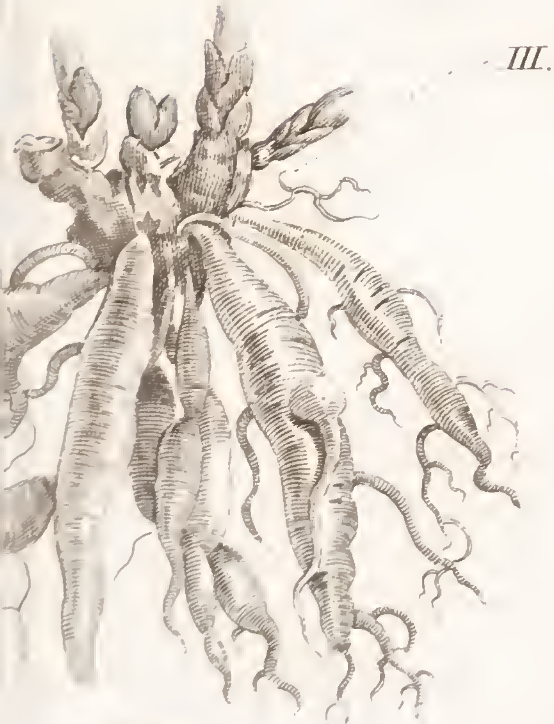

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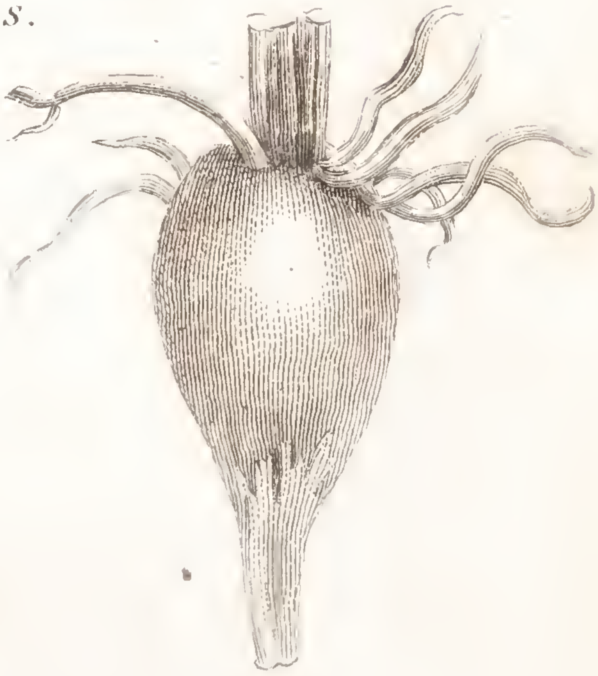

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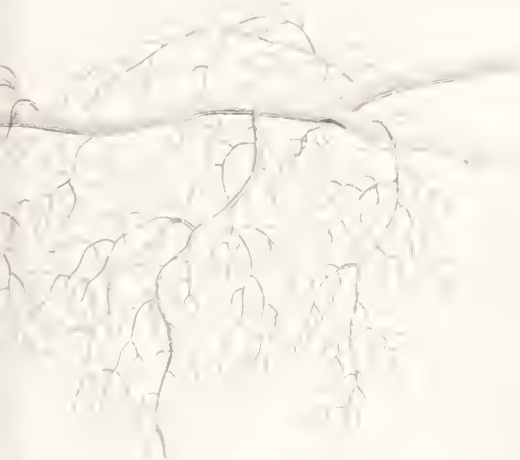

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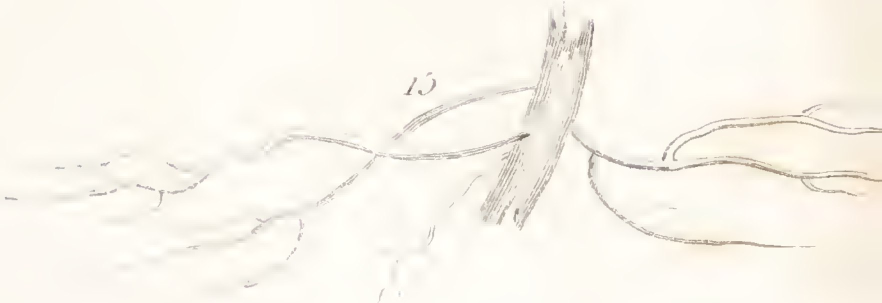

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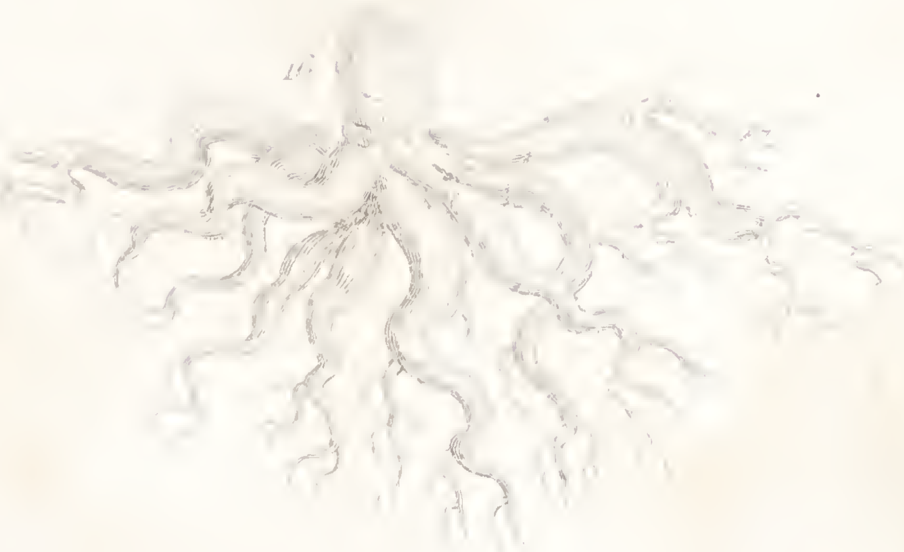

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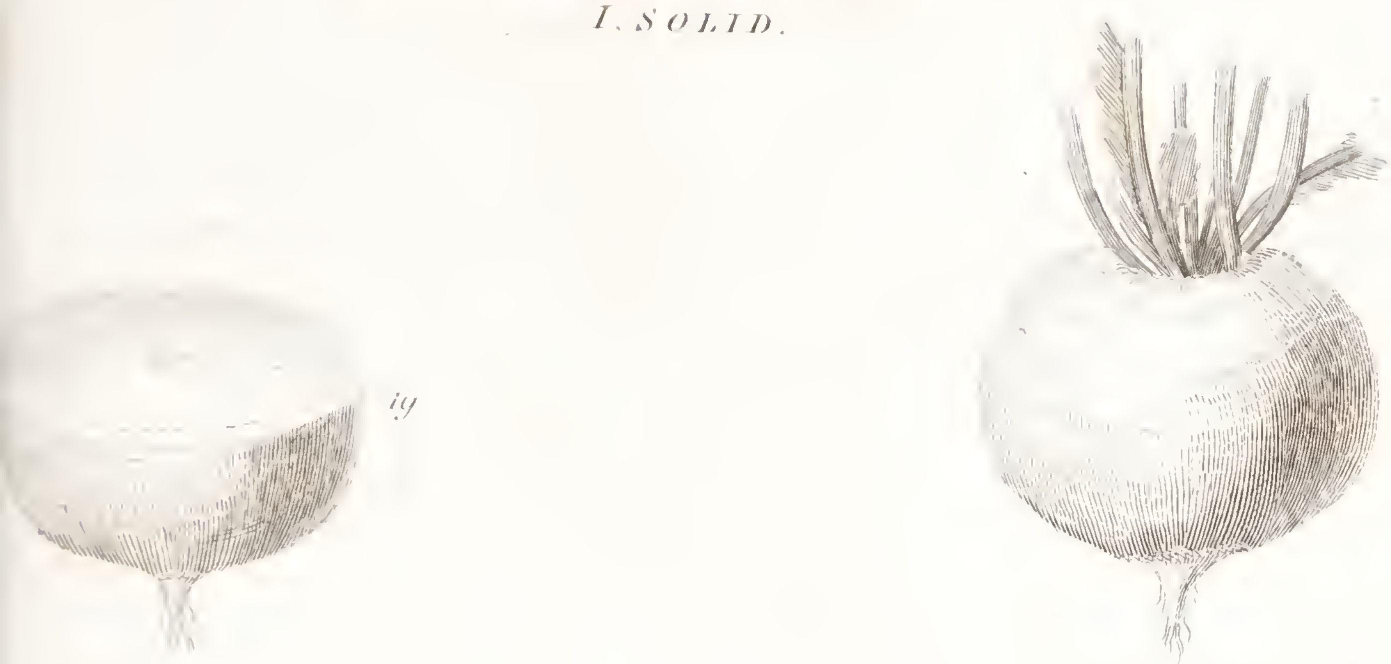
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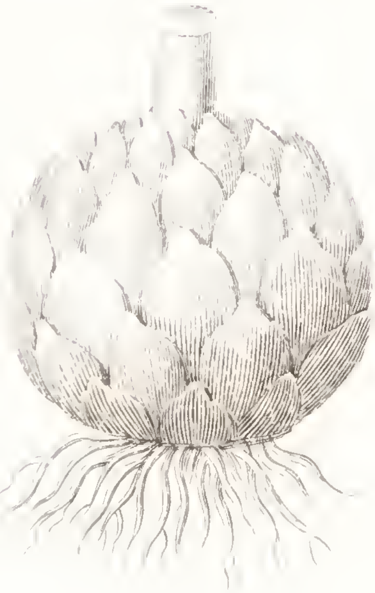
II. SCALY.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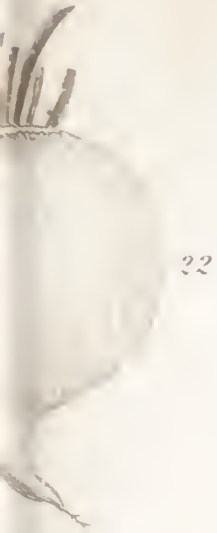
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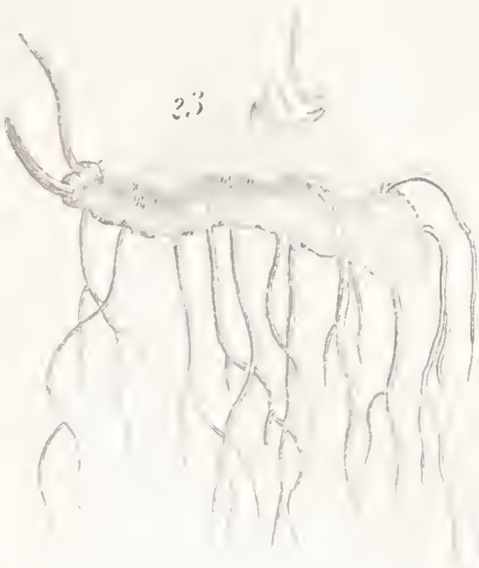
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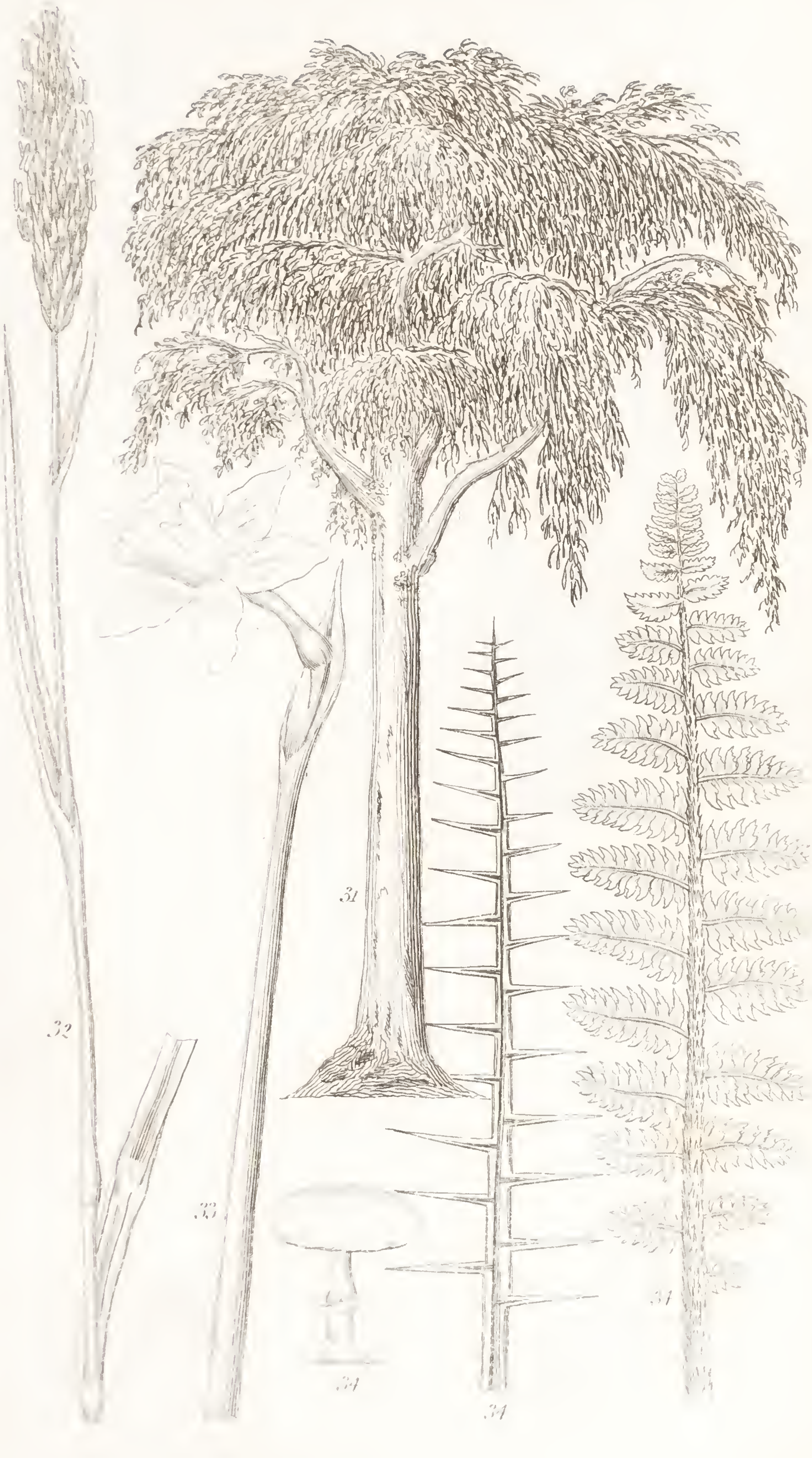
Plate 7.



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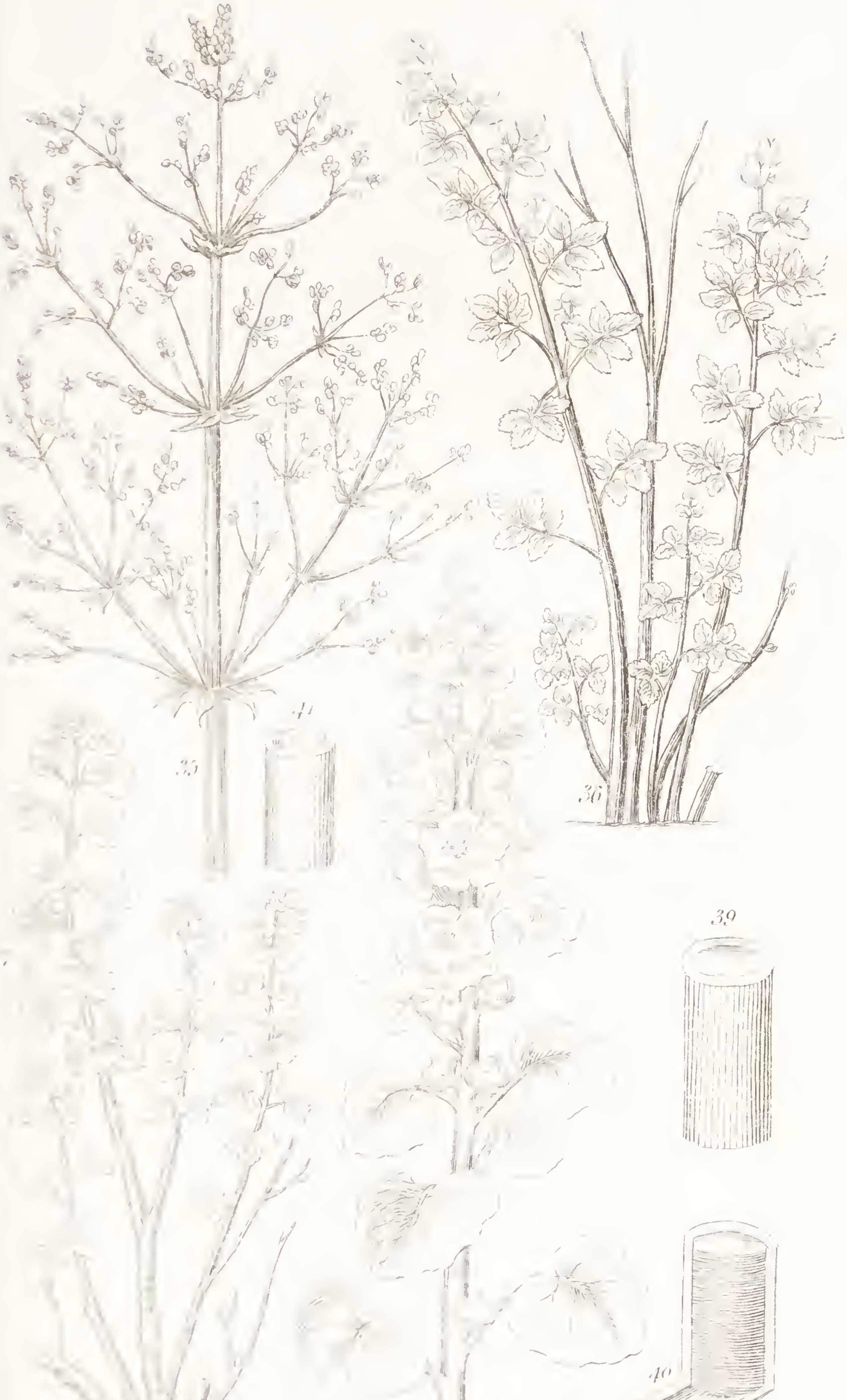

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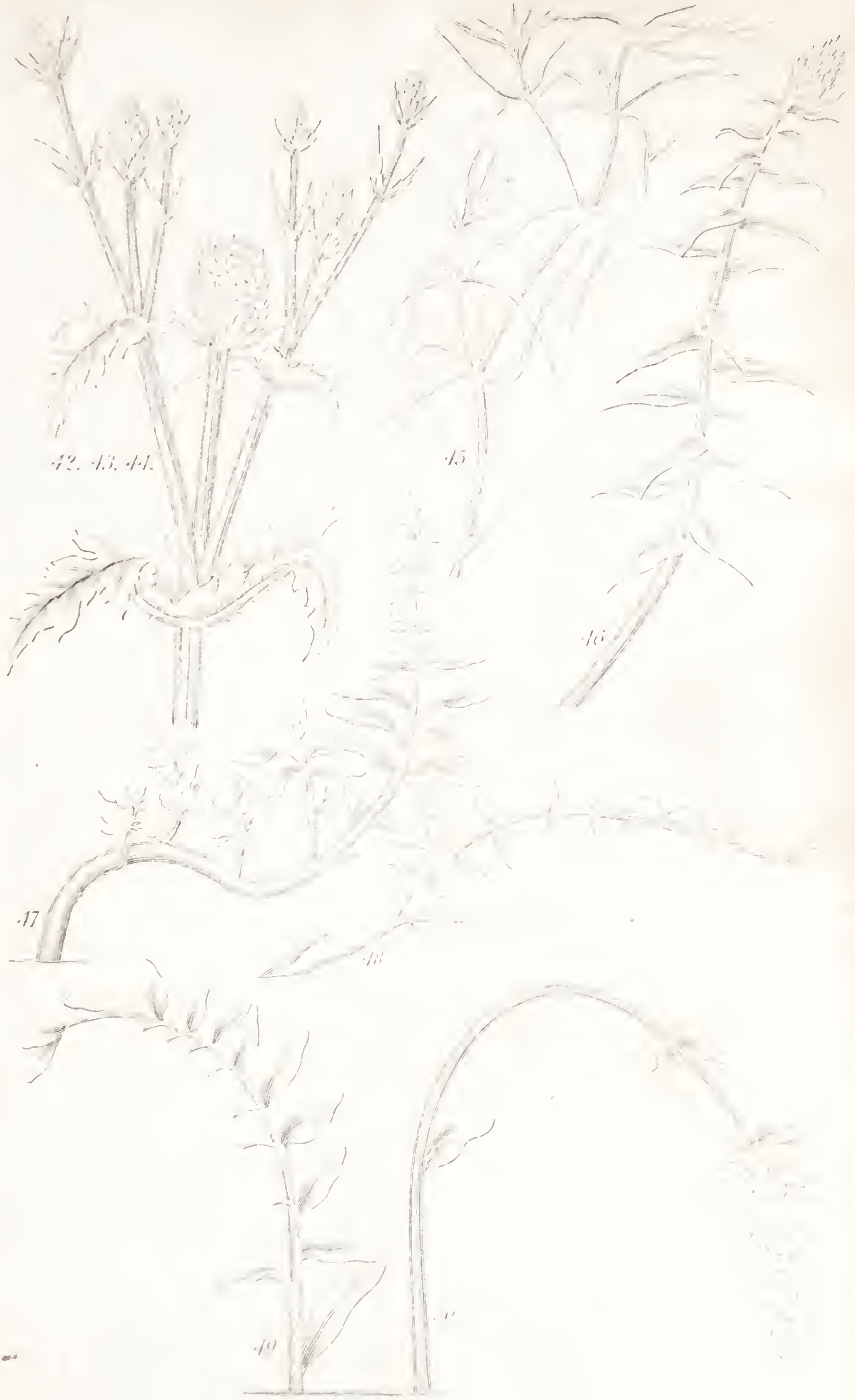

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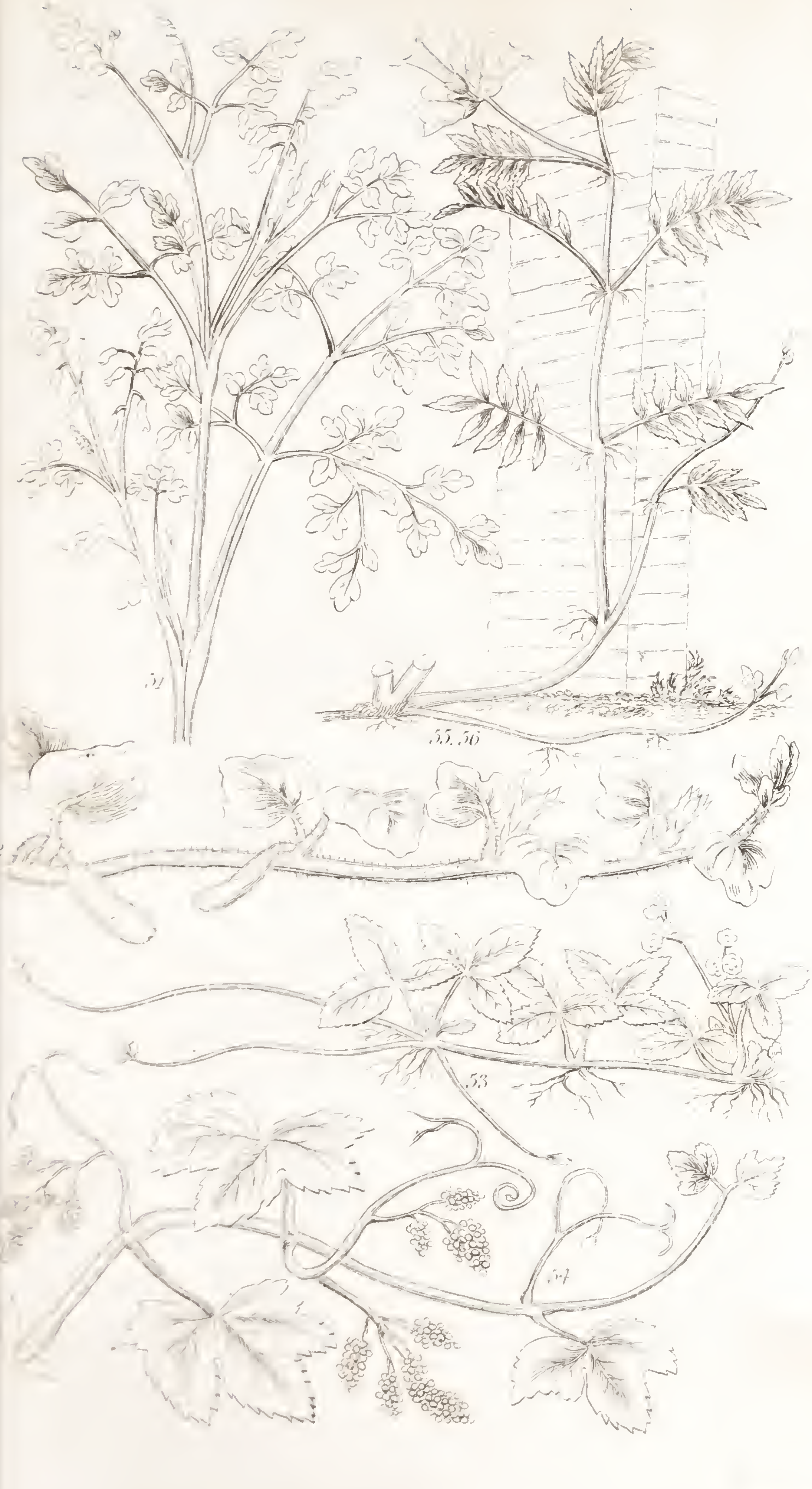

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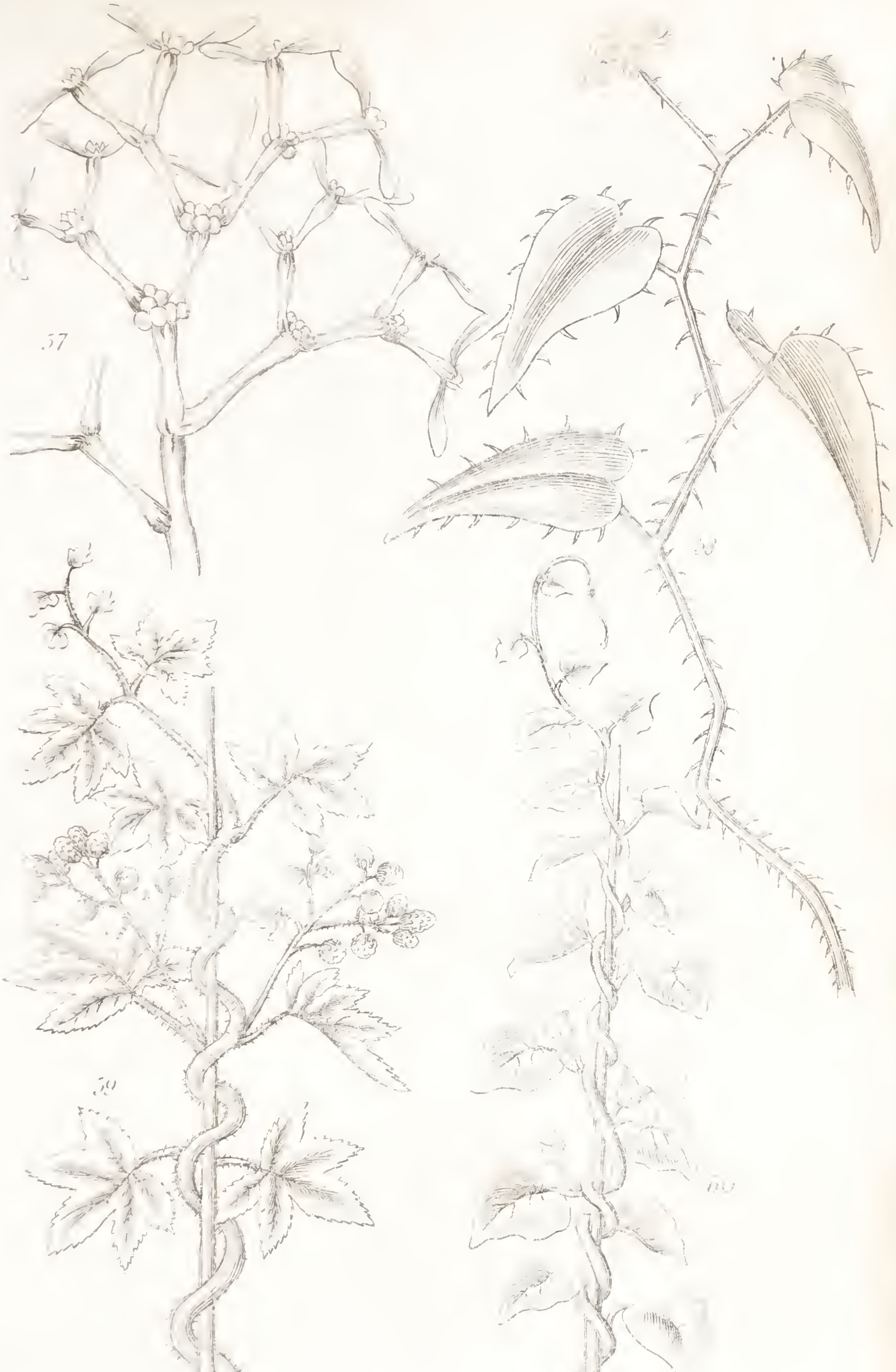

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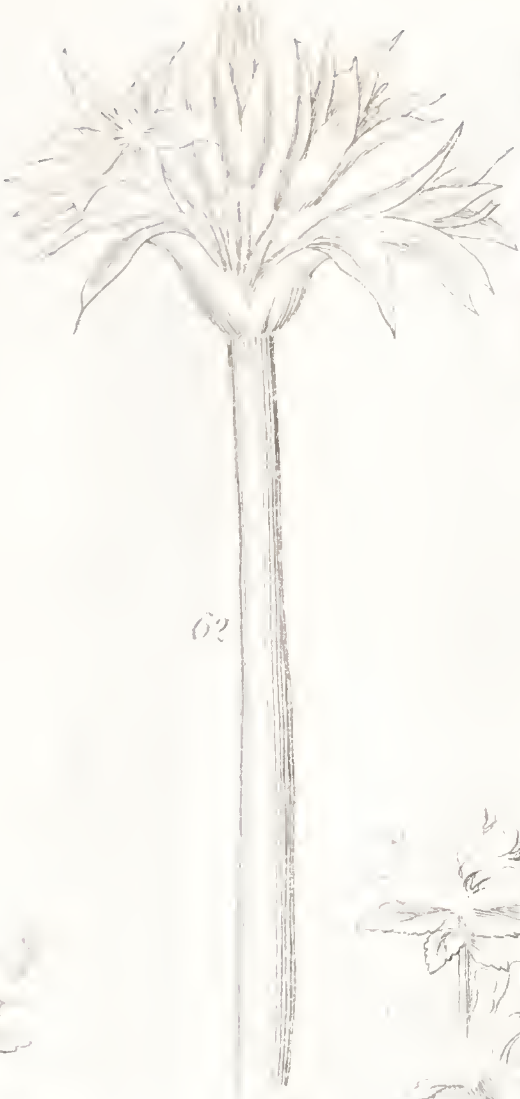
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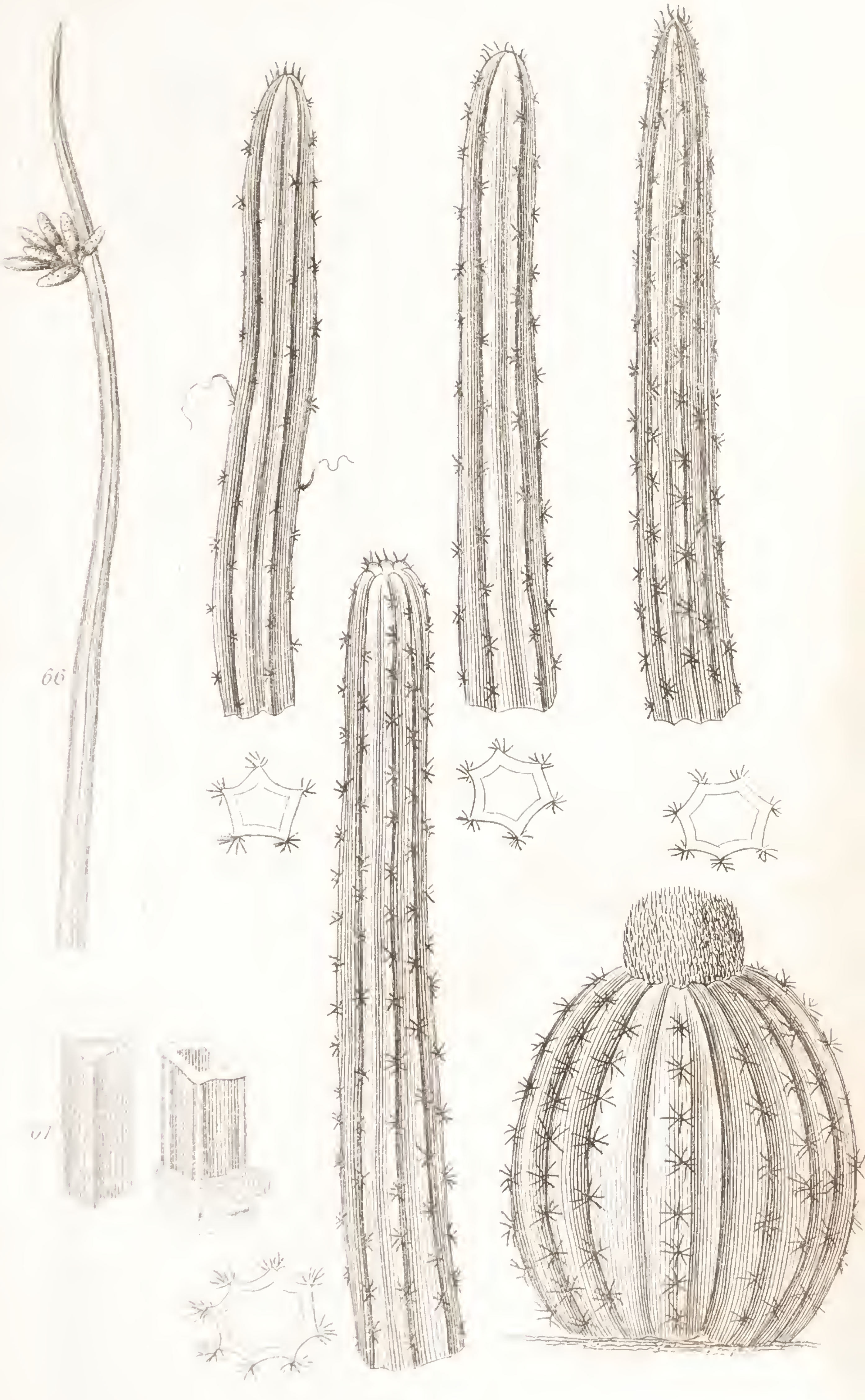

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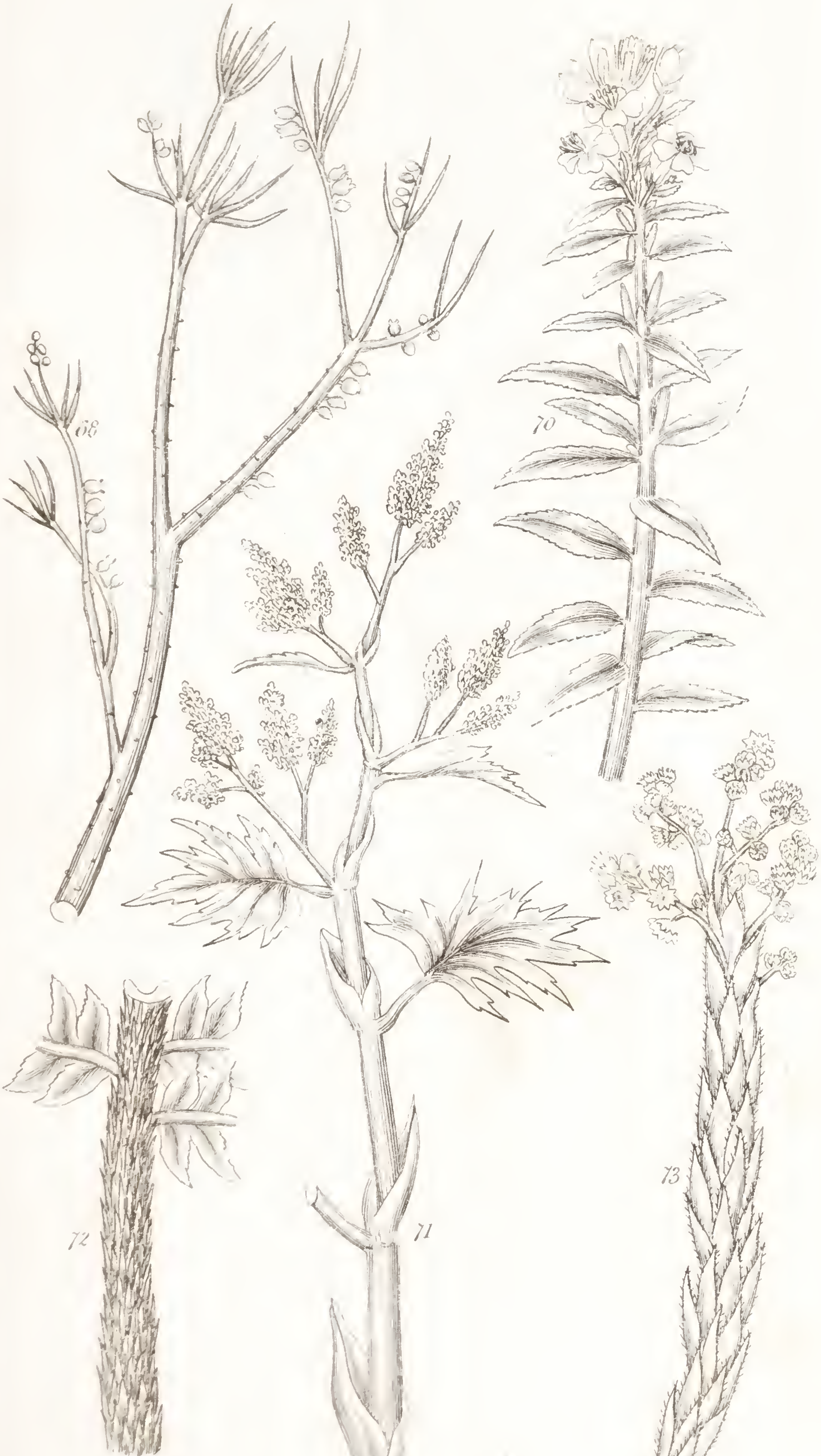

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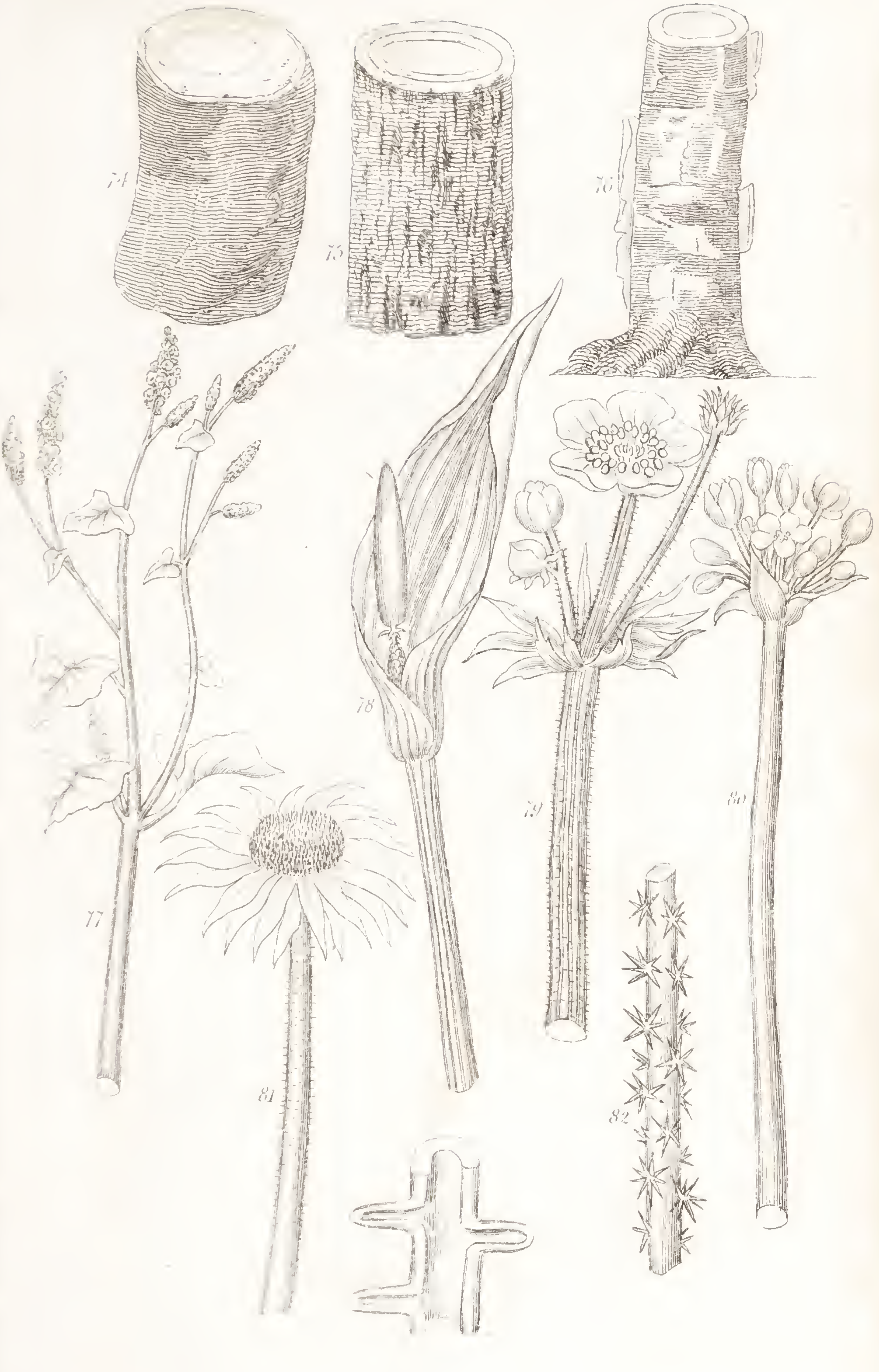

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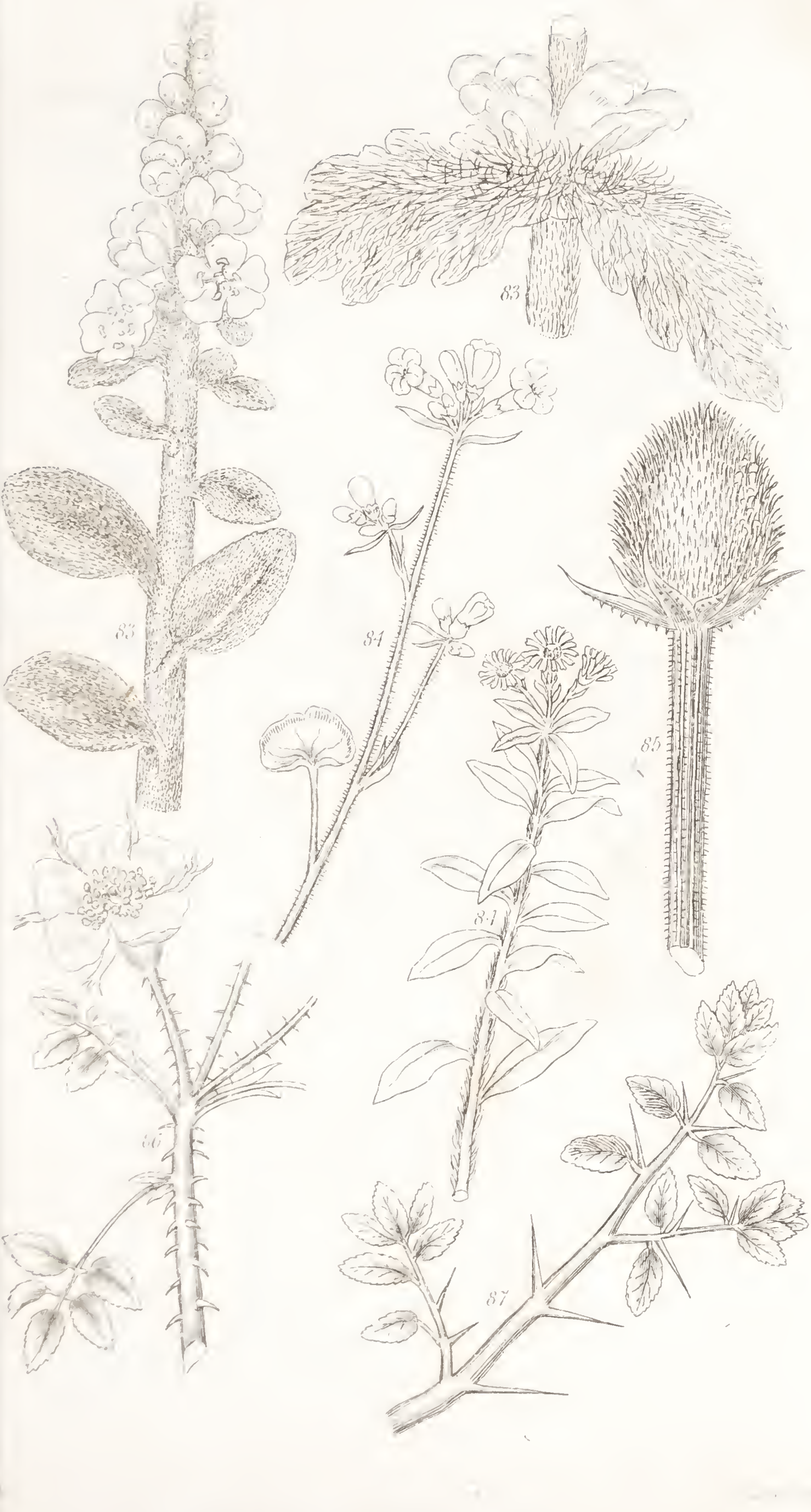

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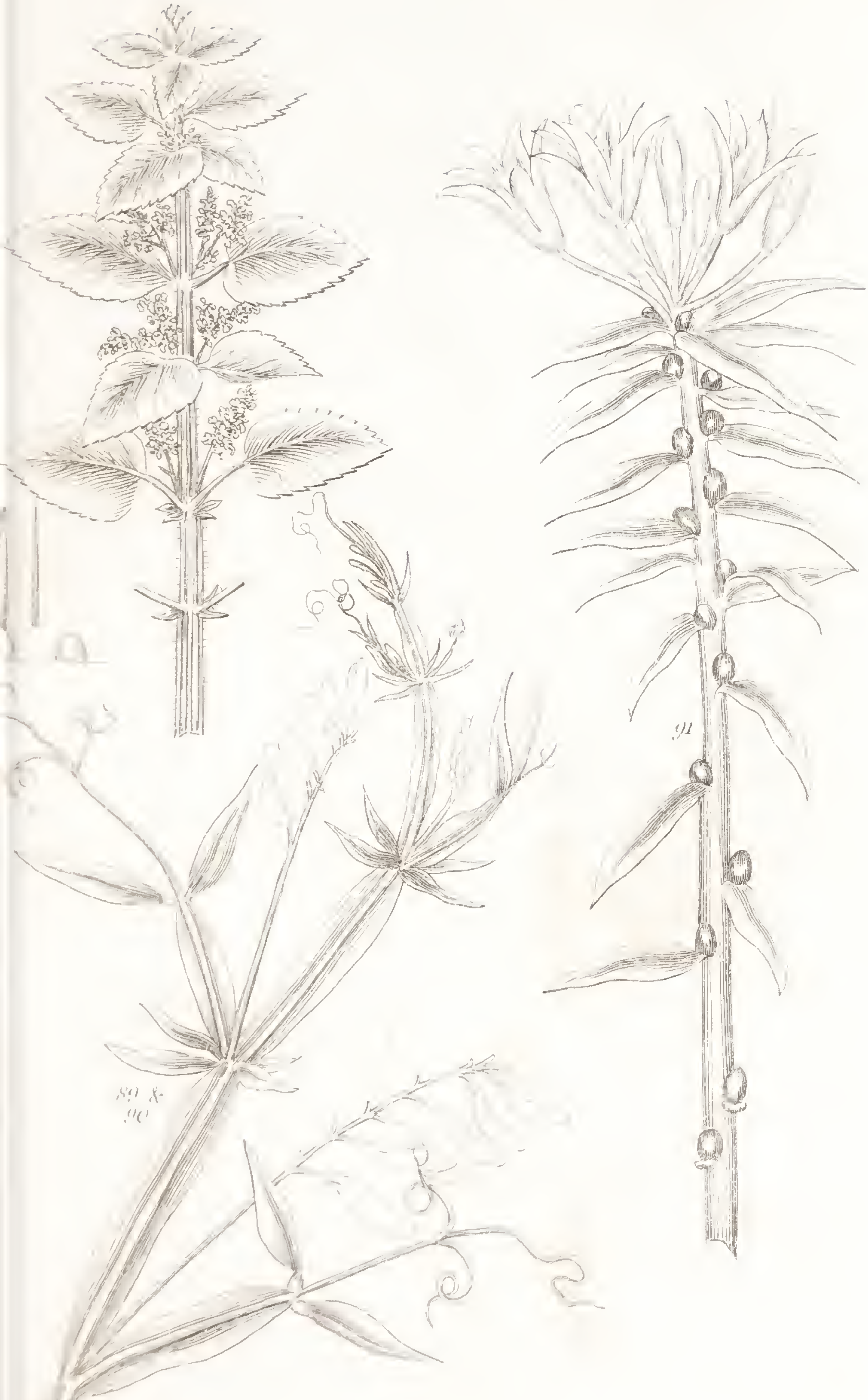

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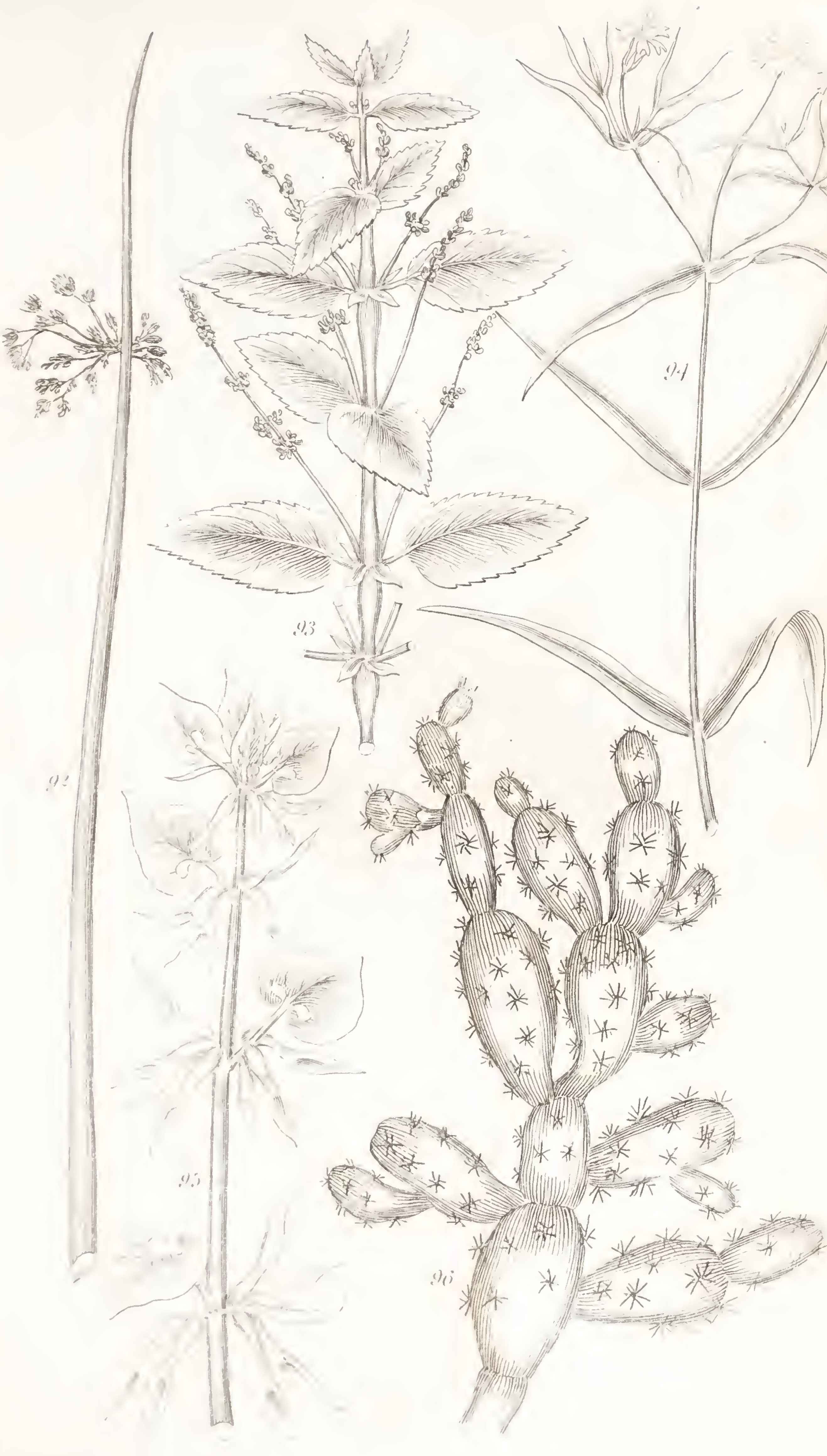

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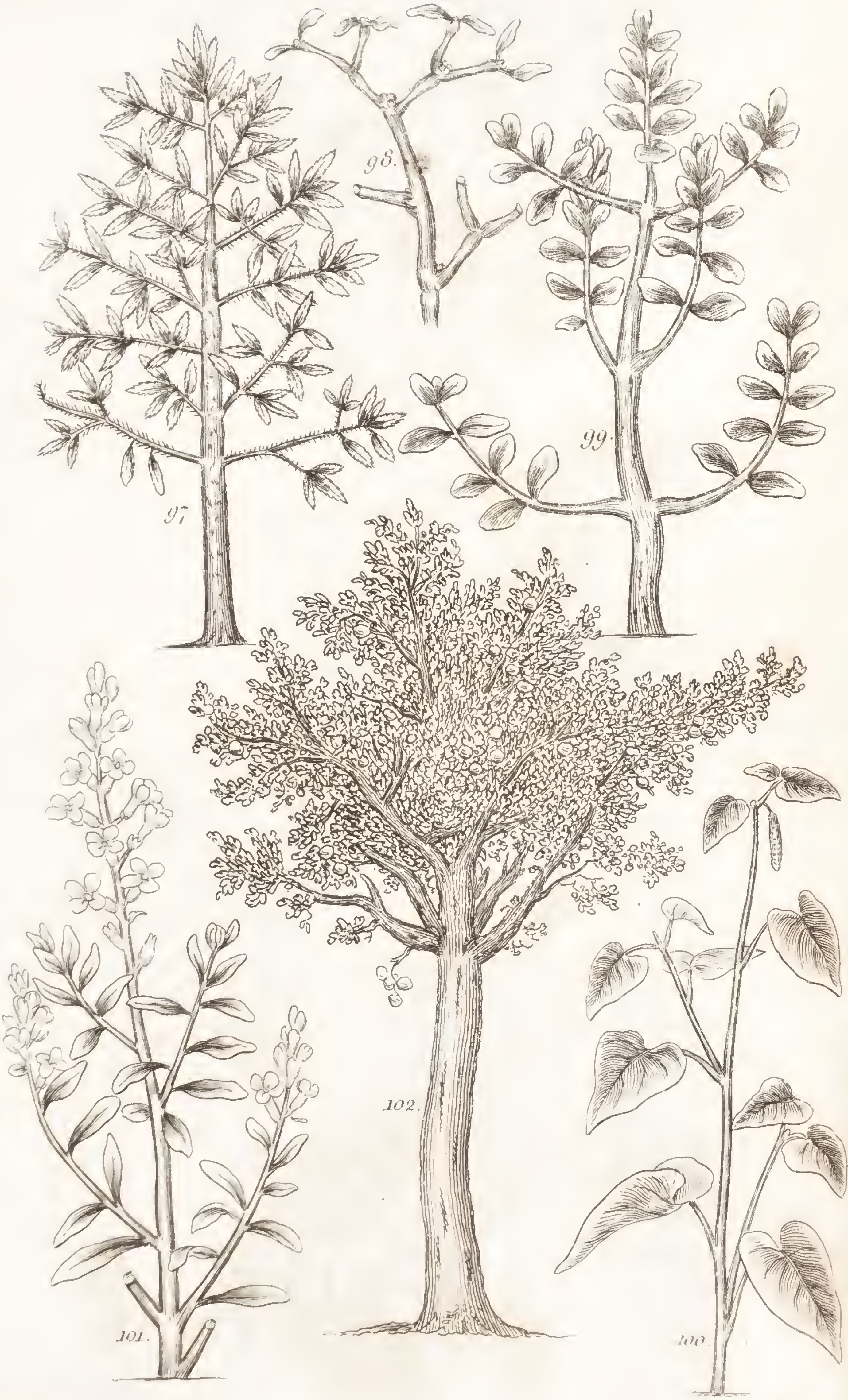

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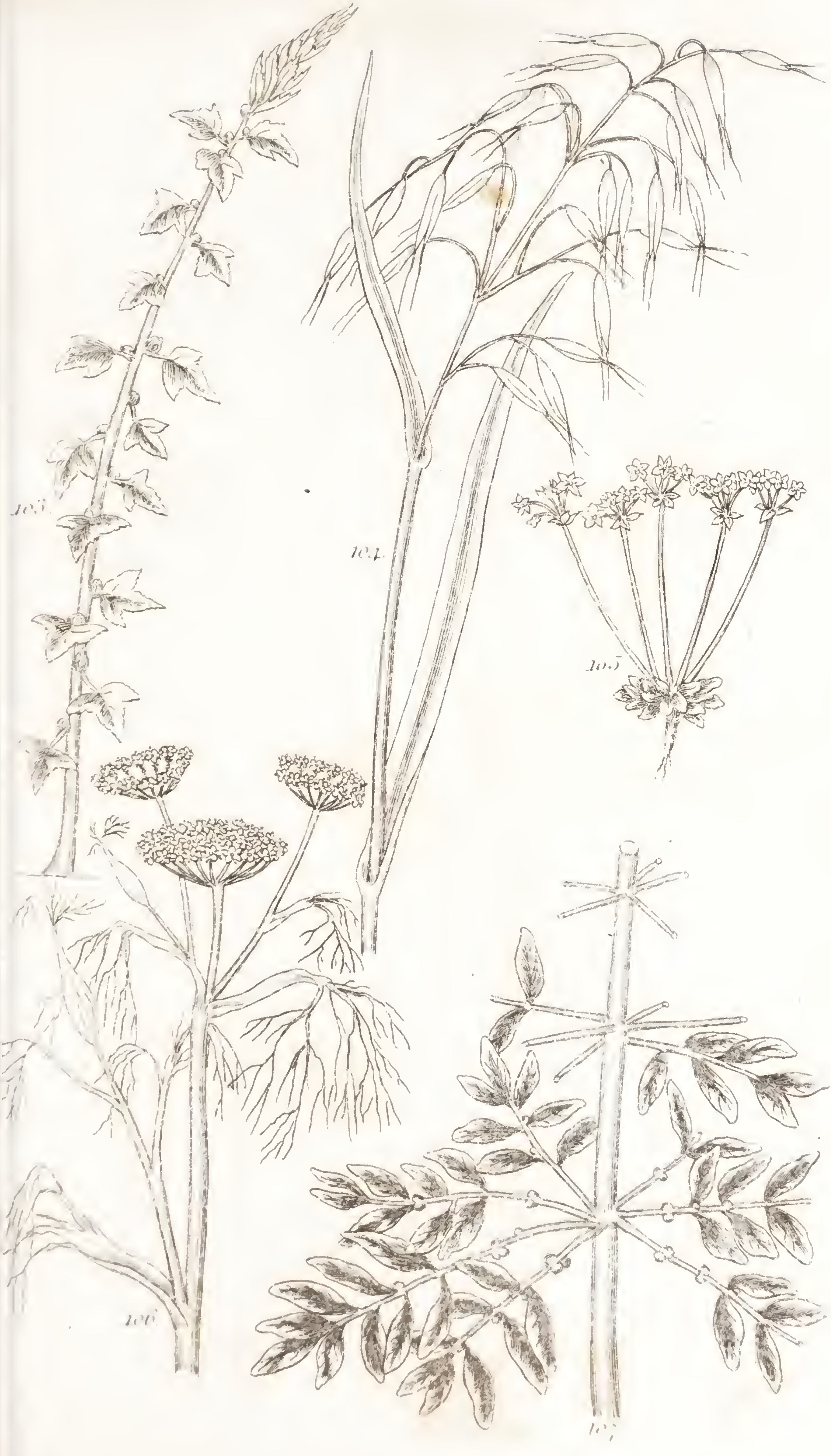

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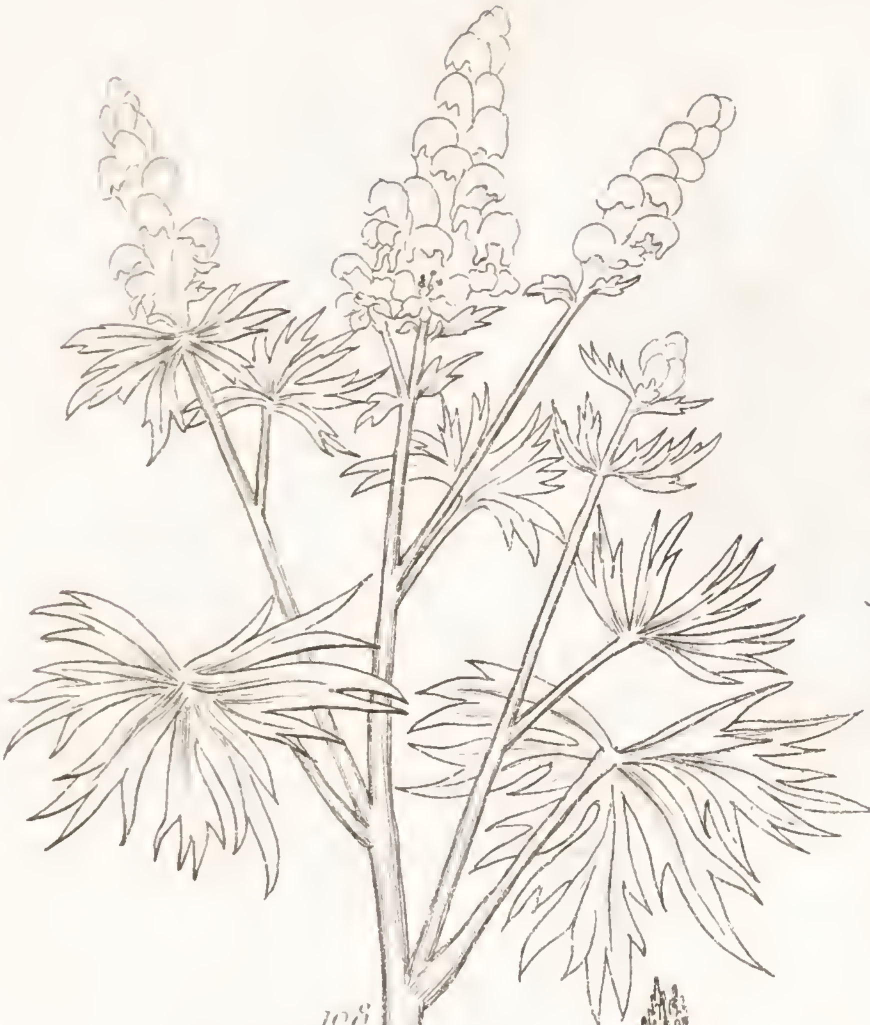
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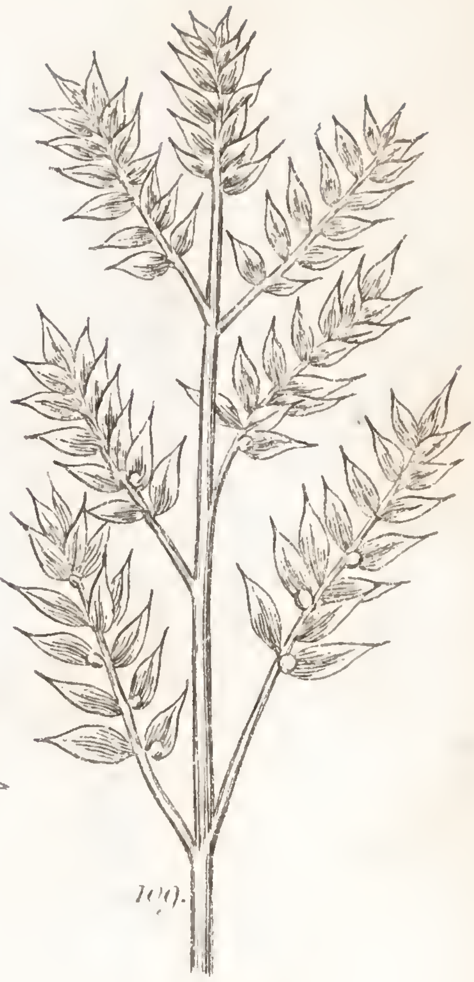
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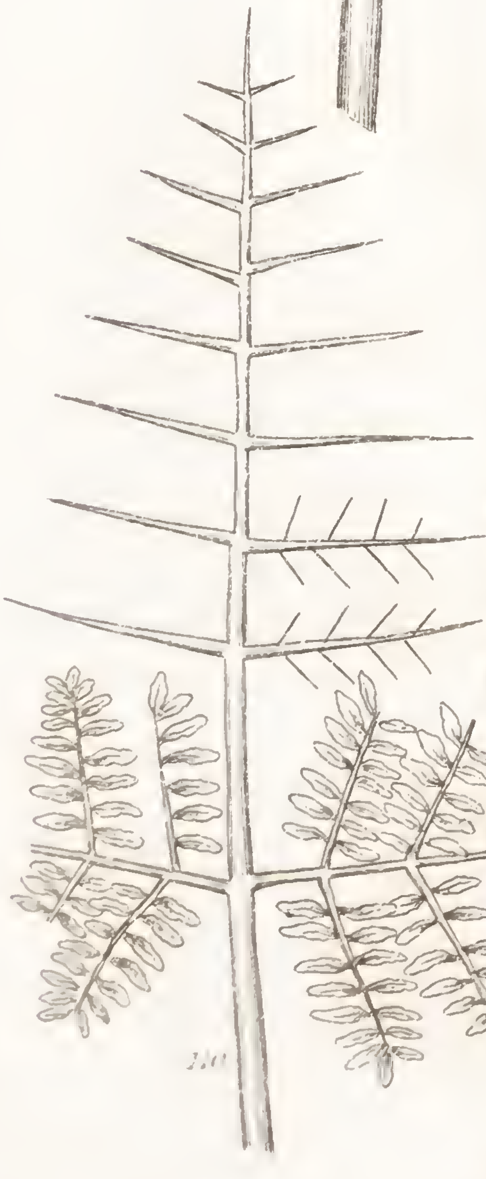
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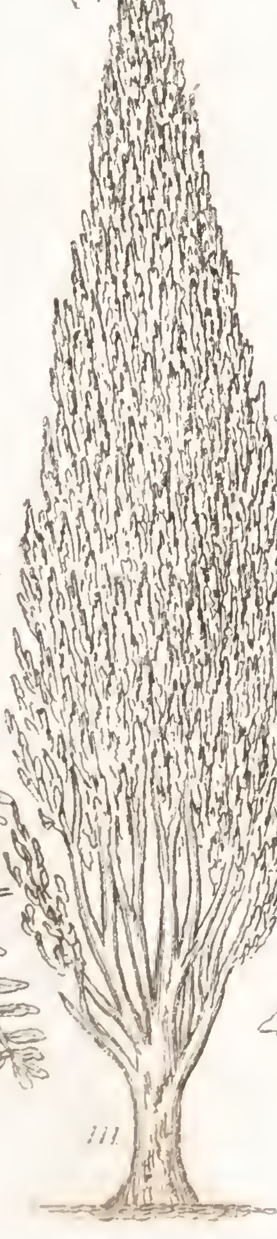
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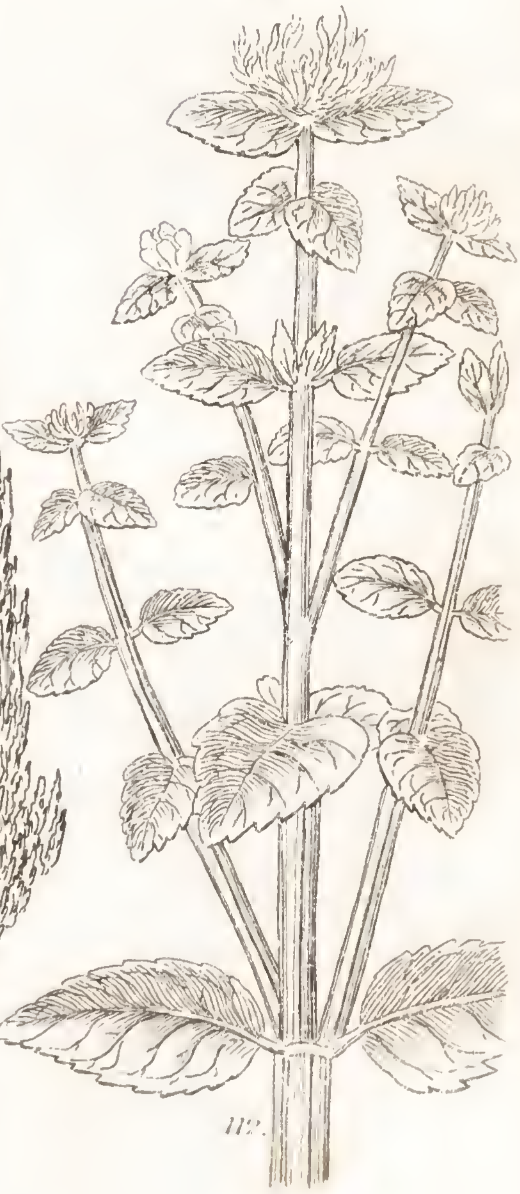
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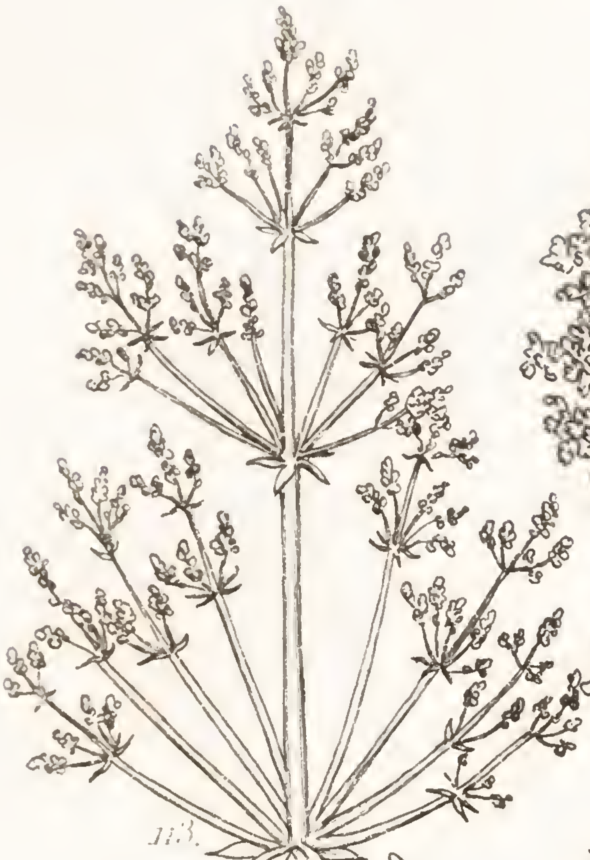
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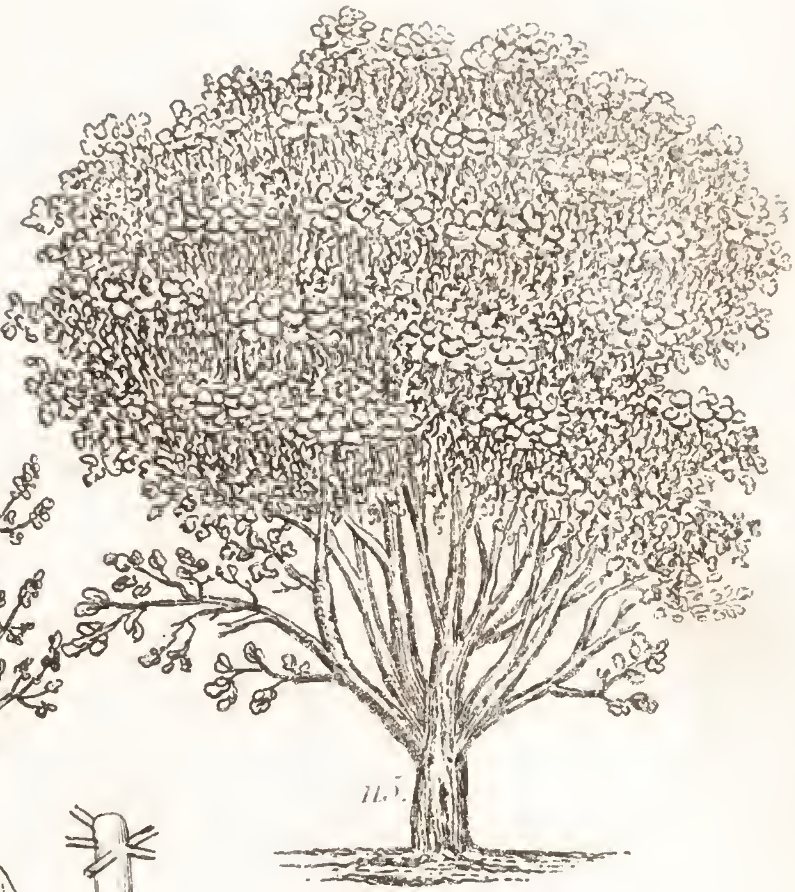
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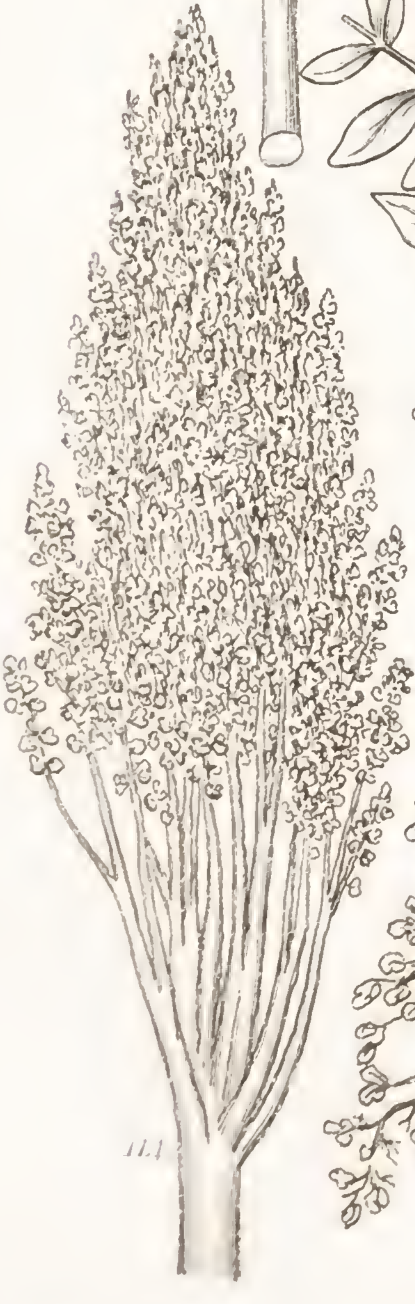
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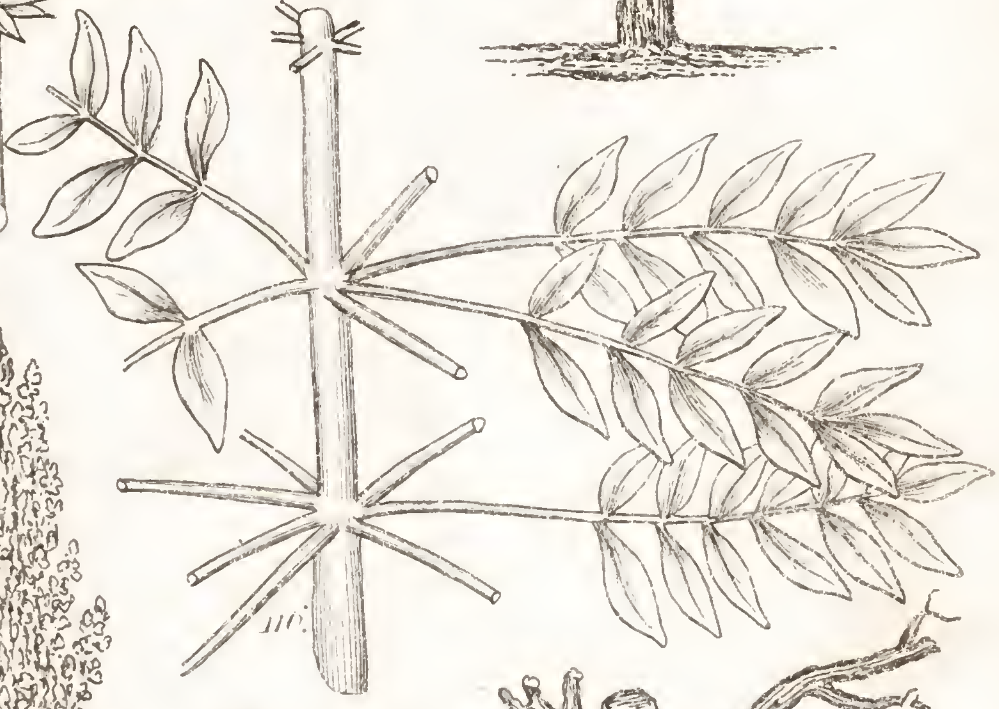
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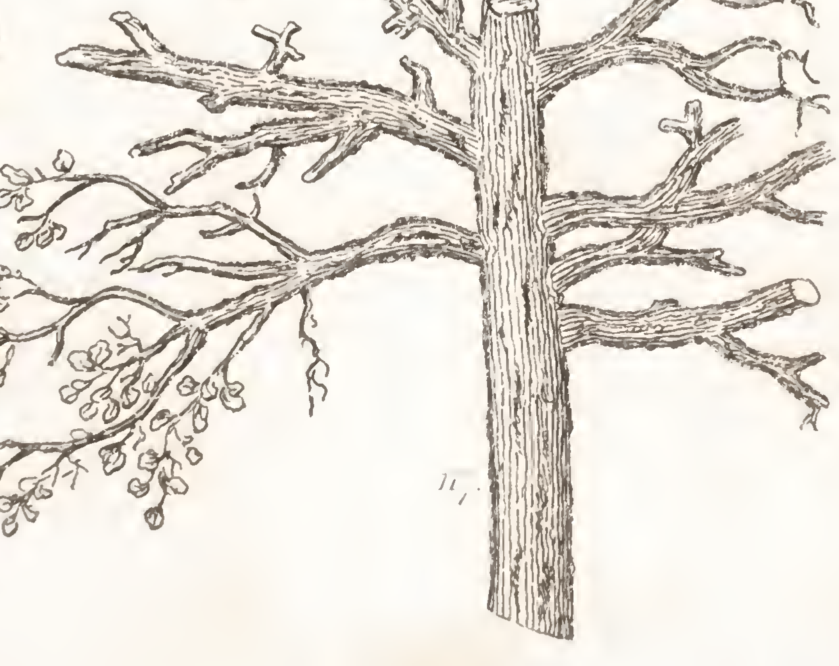
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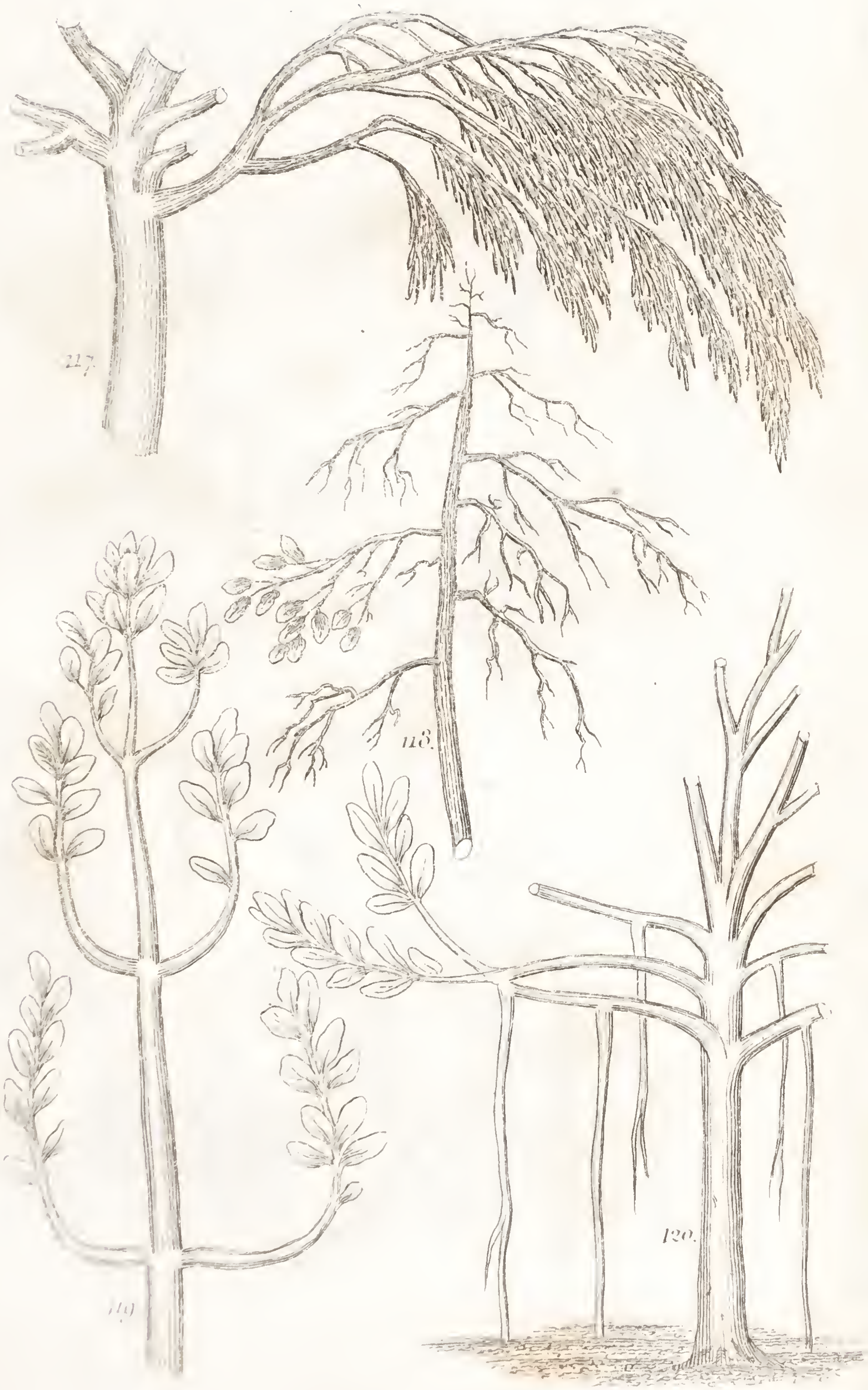
Plate 23.



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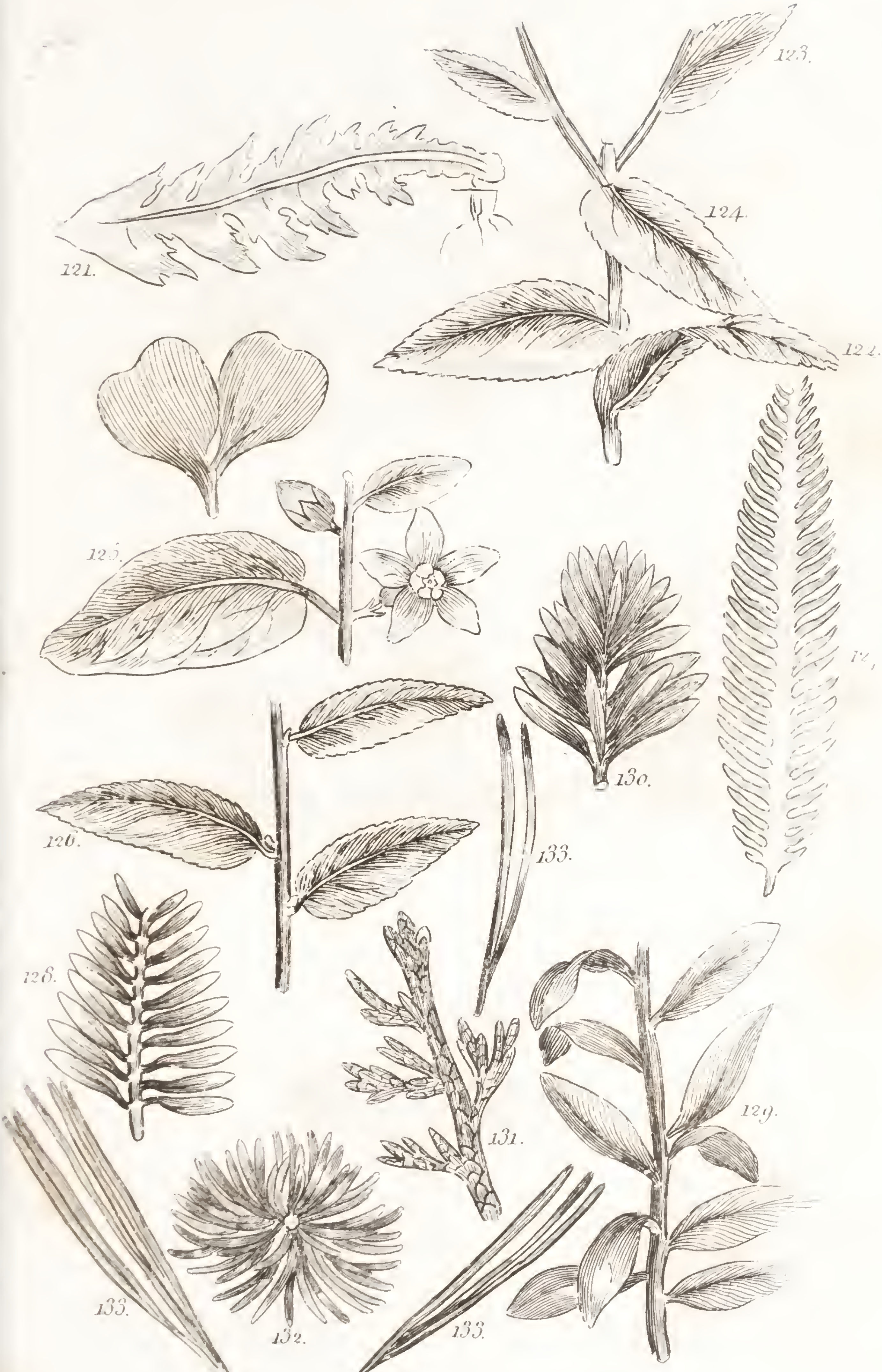

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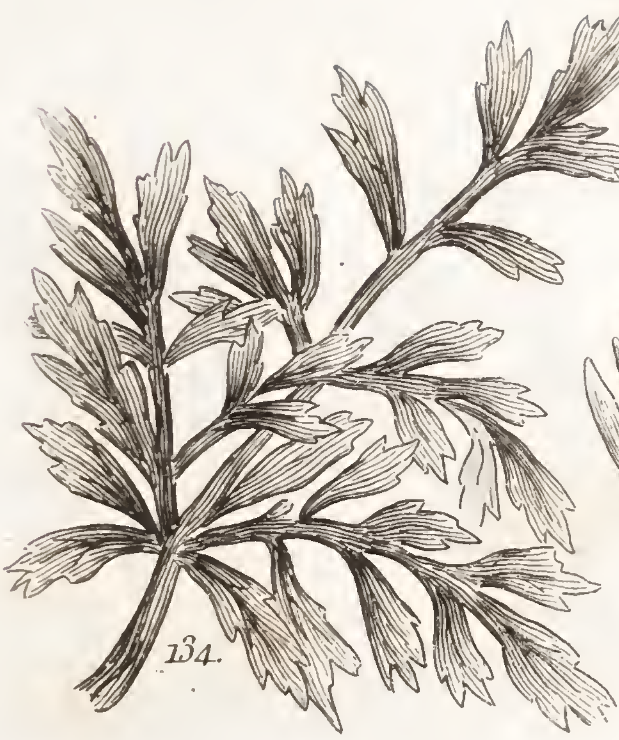
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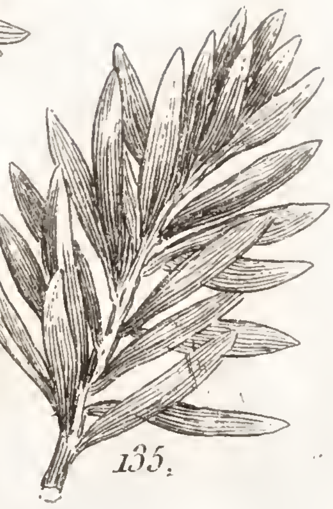
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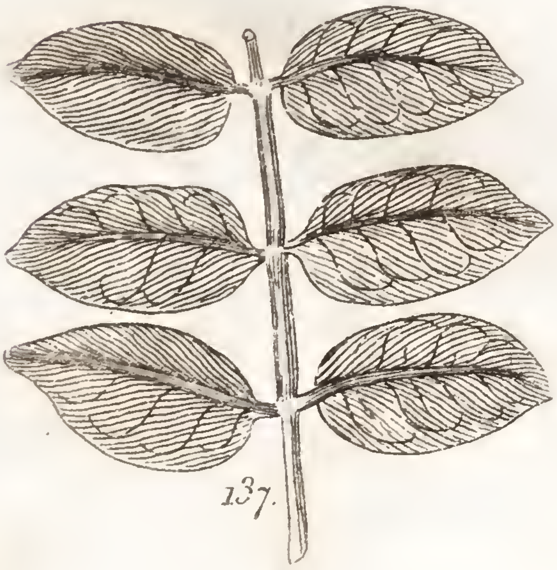
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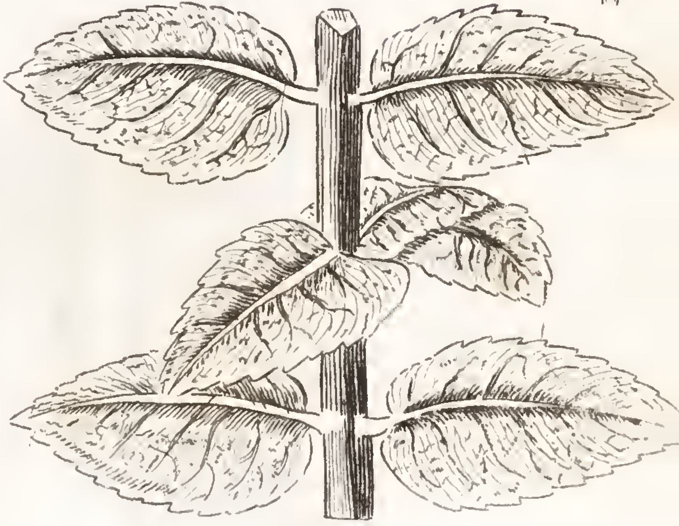
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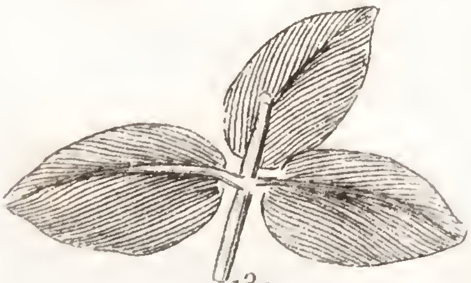
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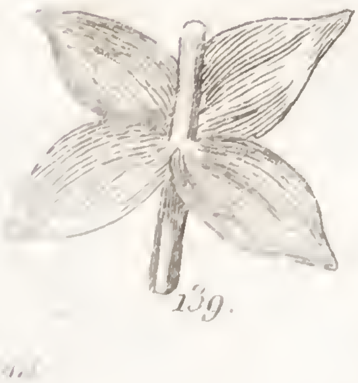
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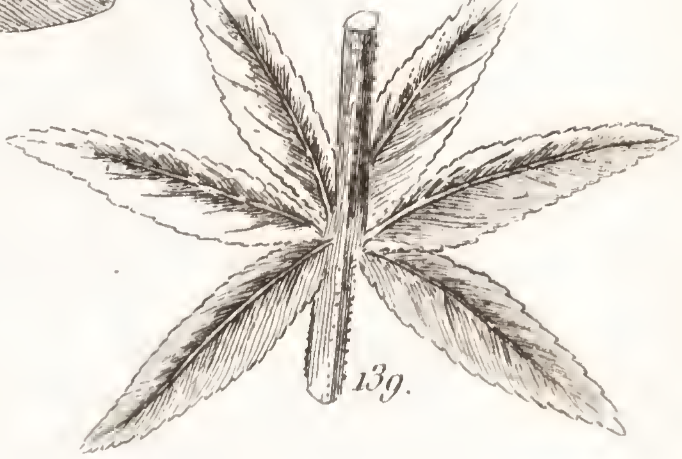
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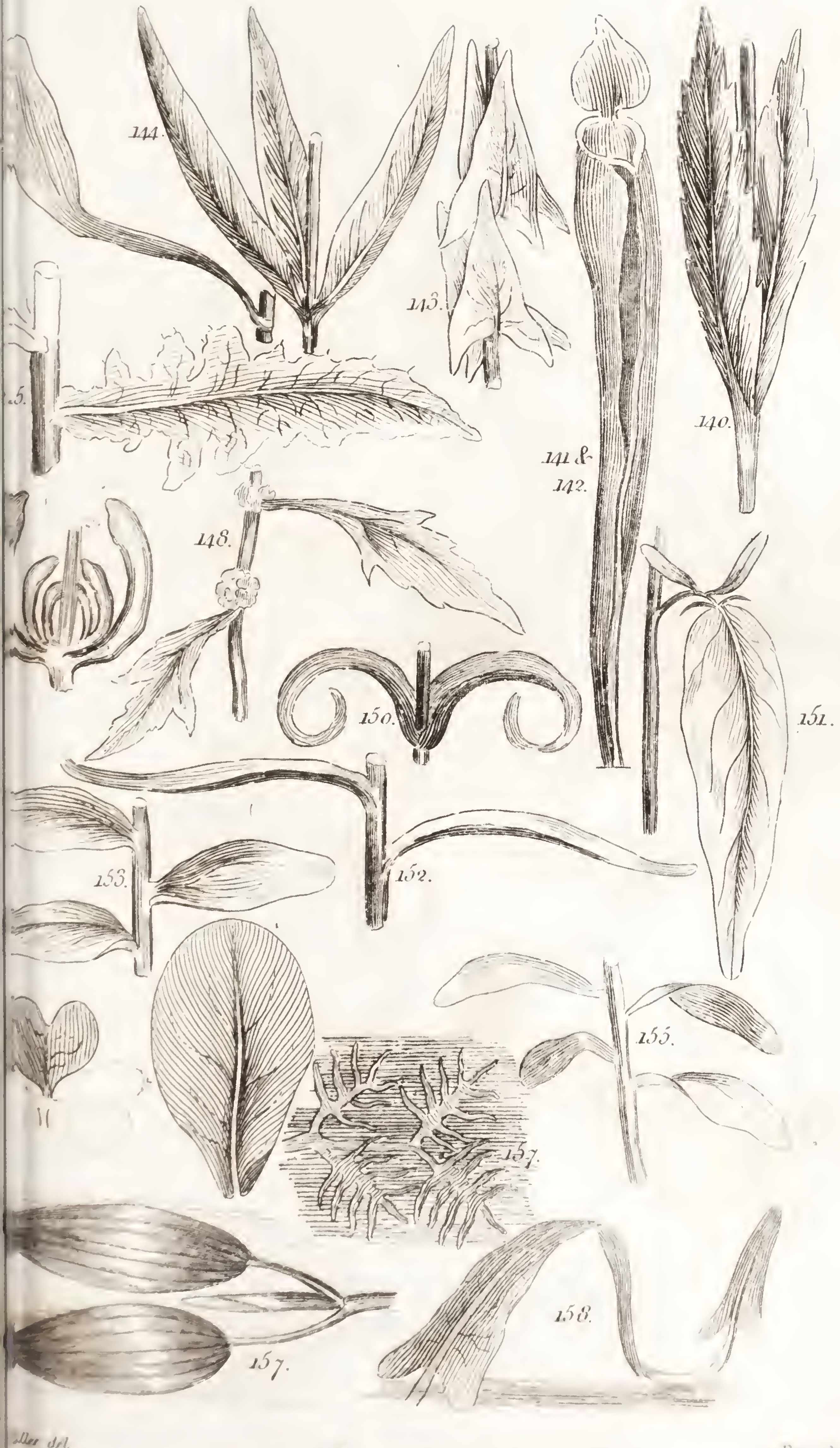

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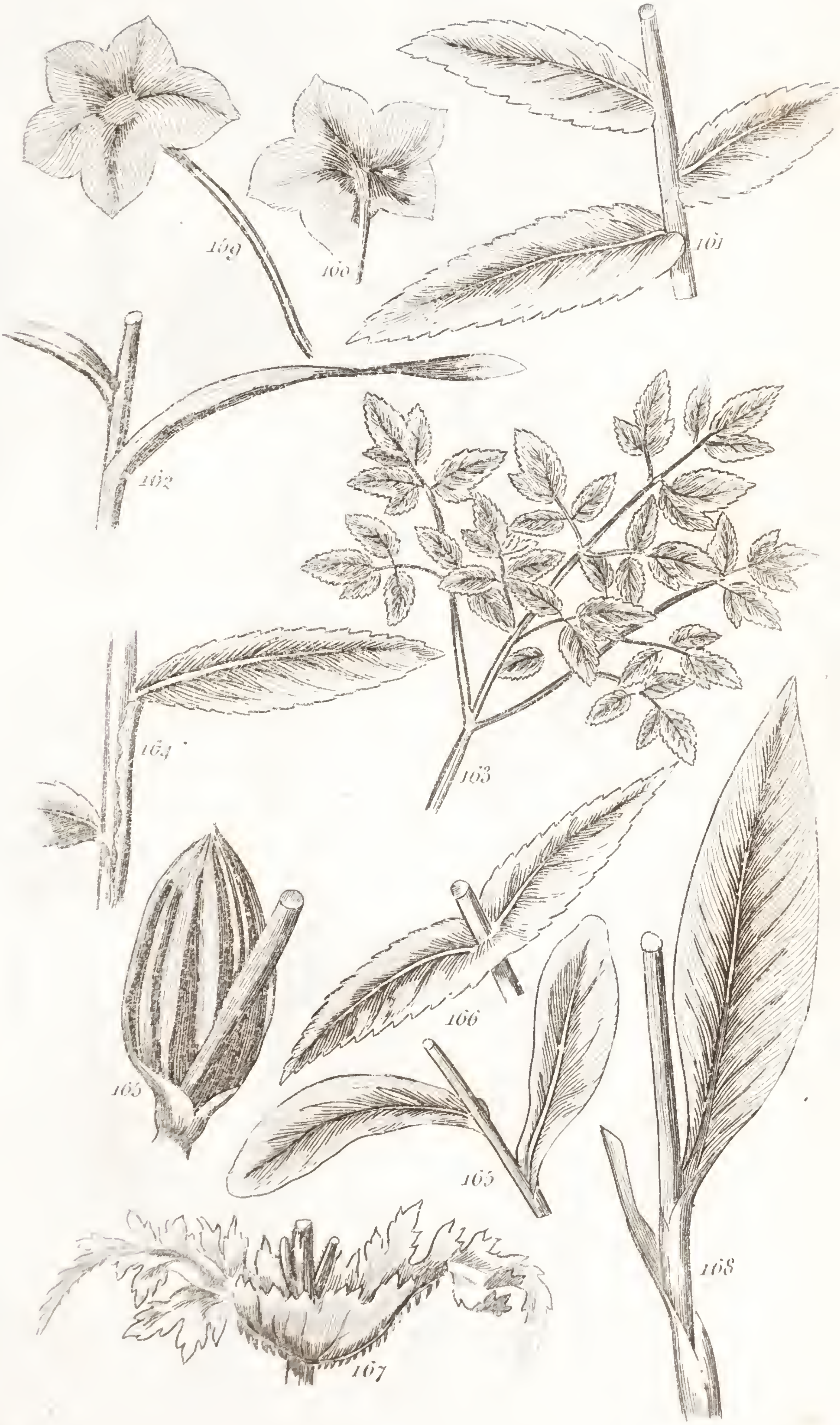

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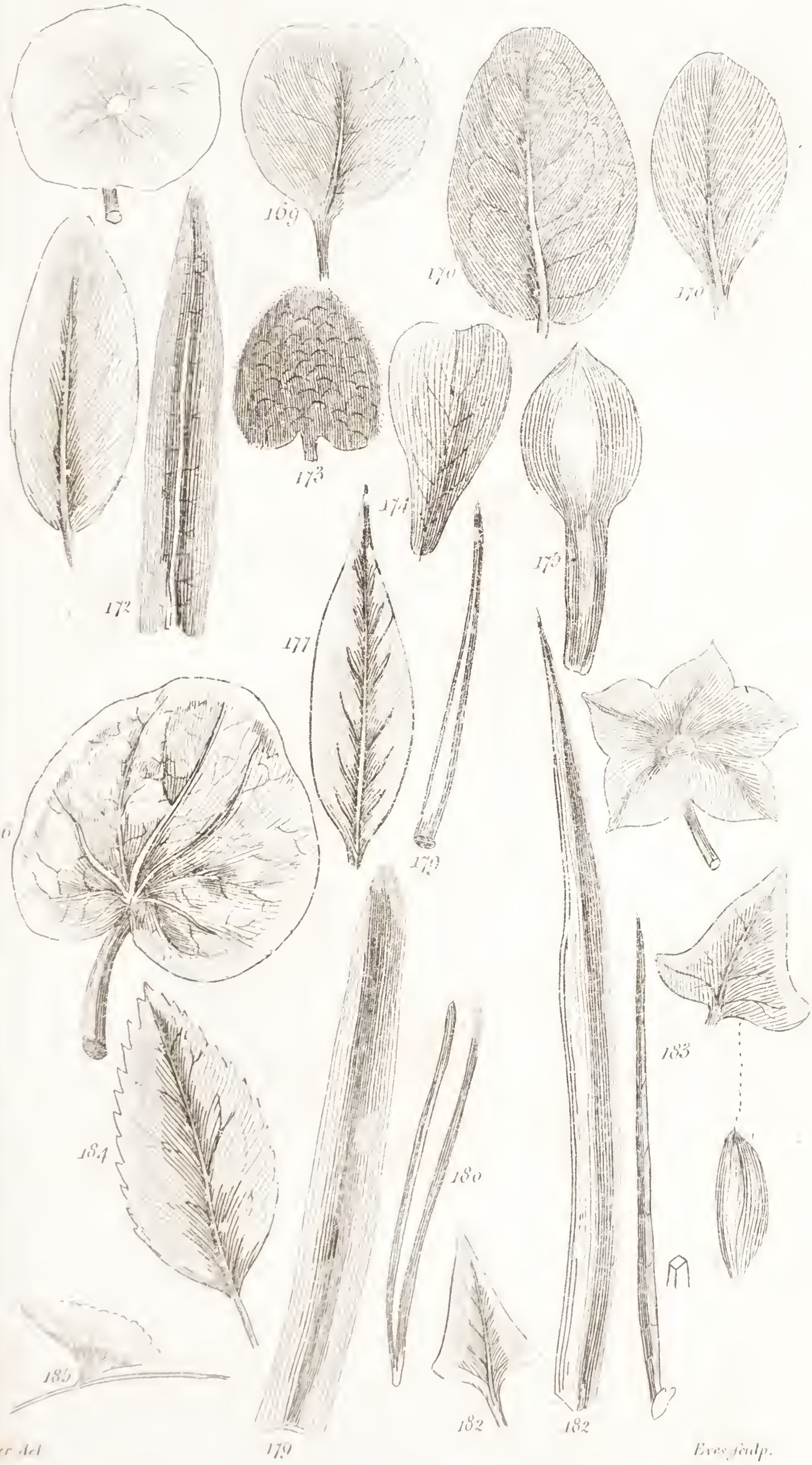

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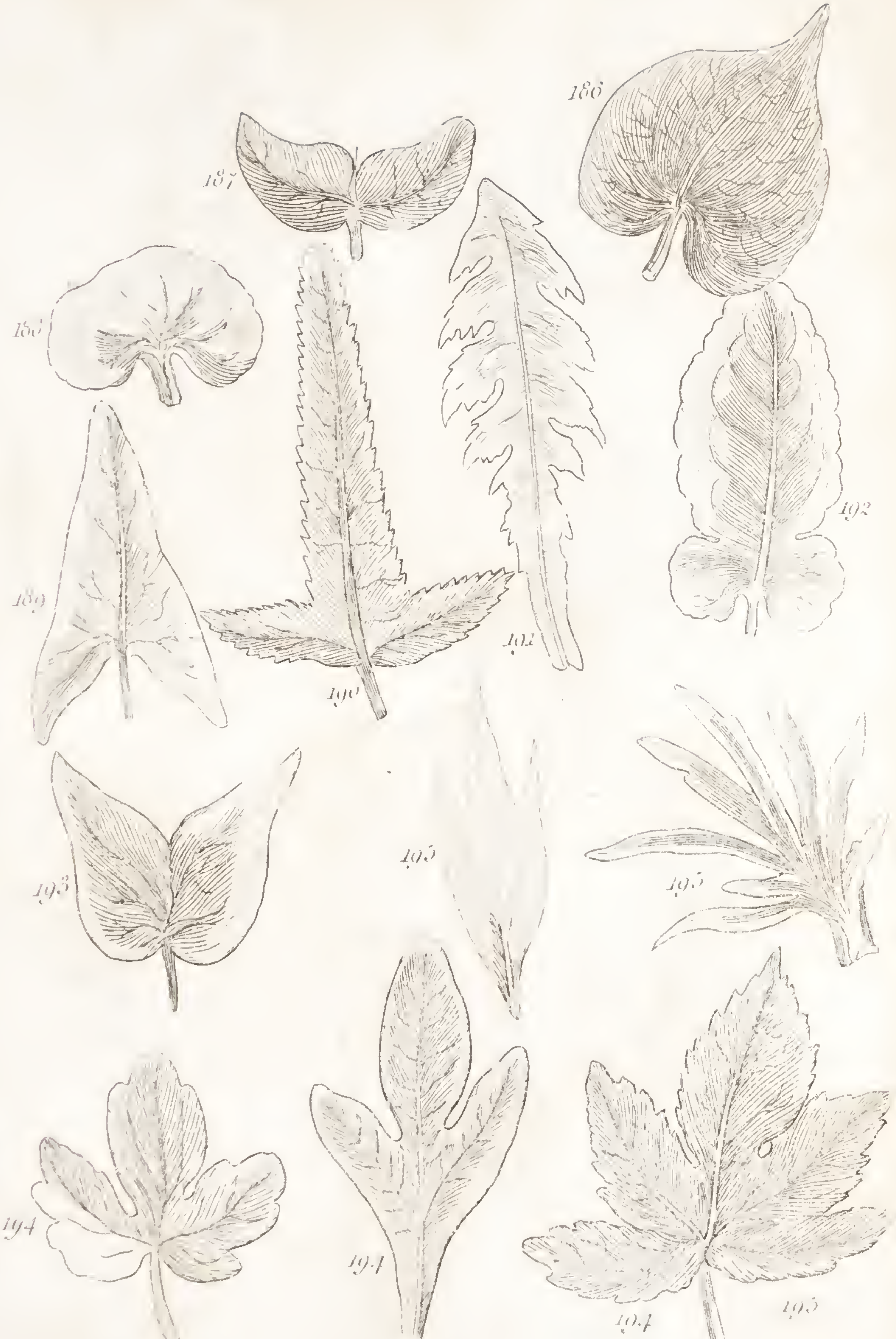

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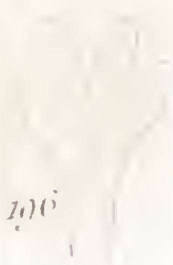

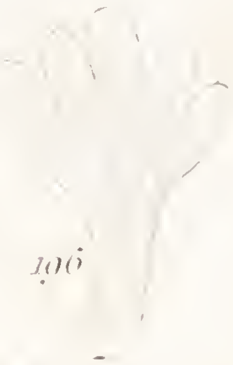

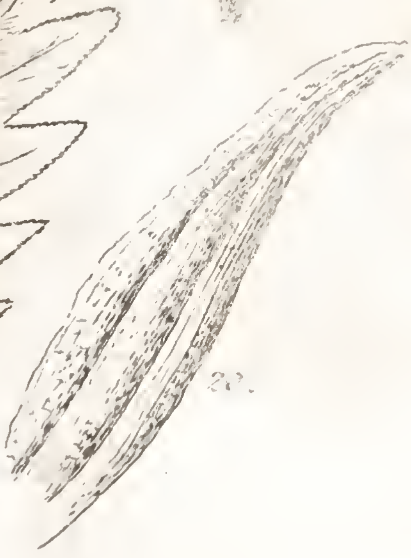

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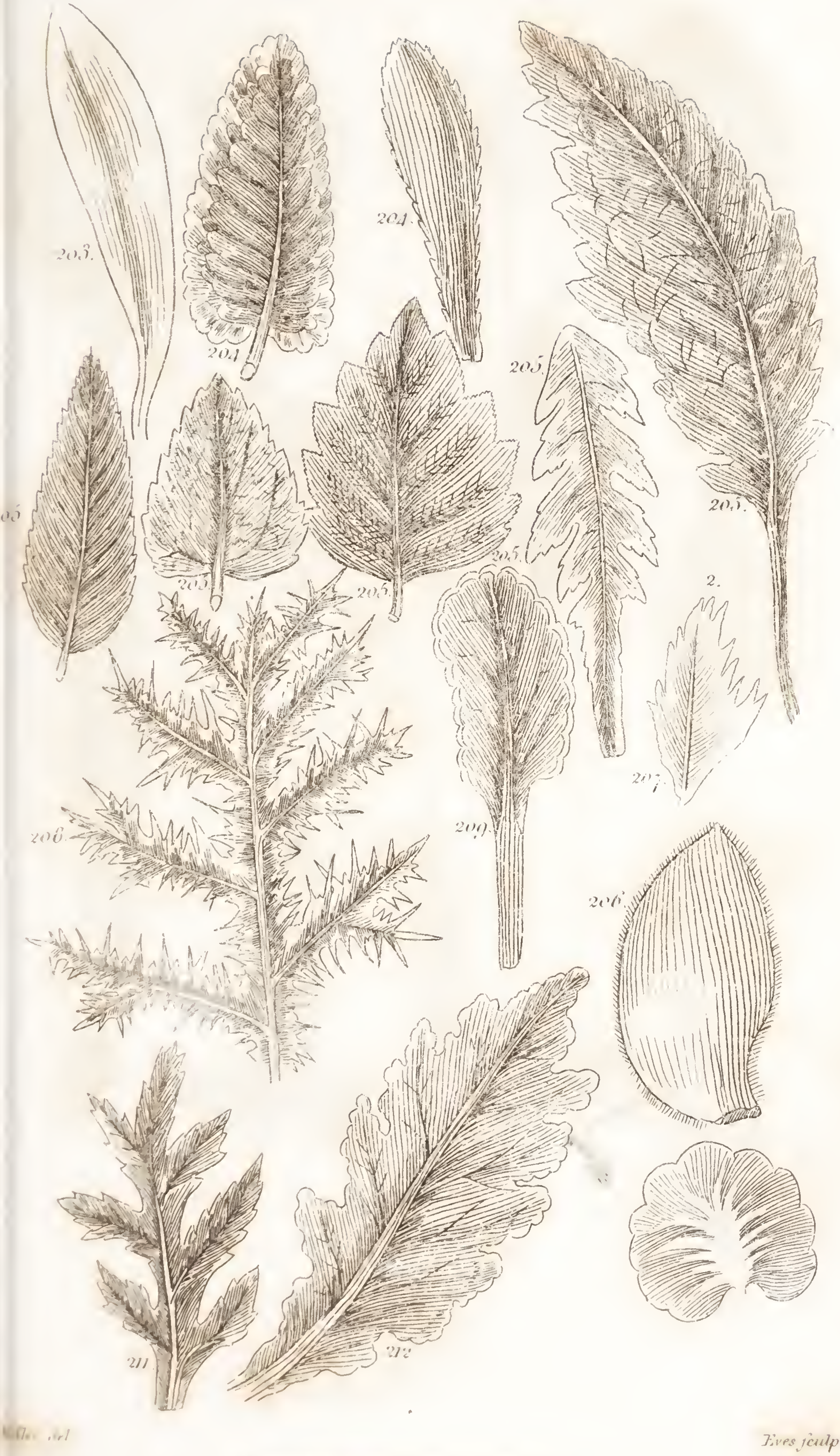

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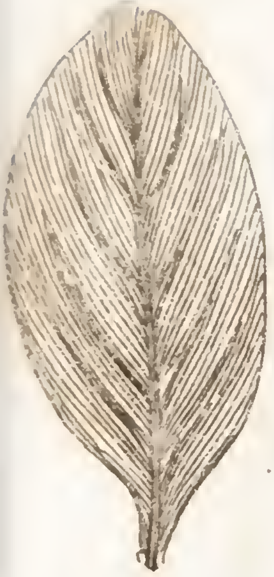

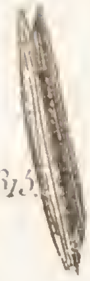

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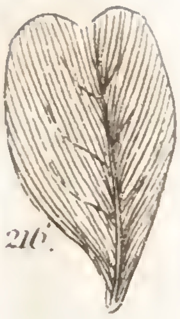

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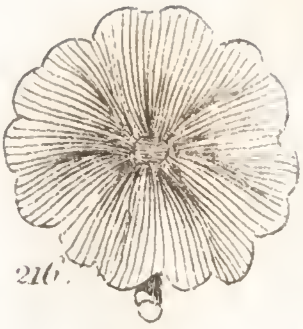

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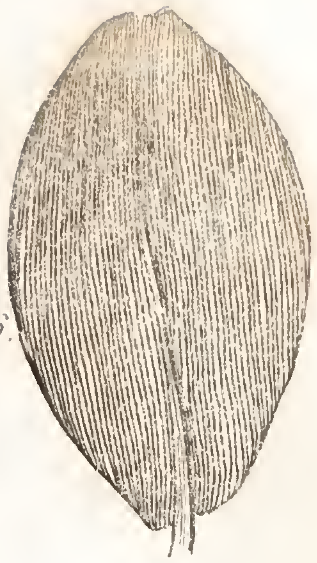

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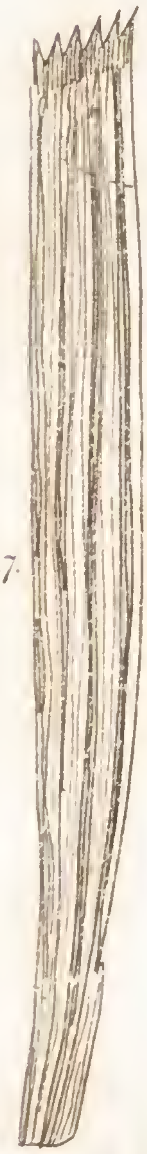

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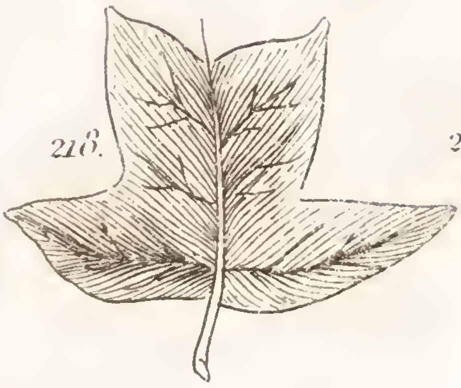

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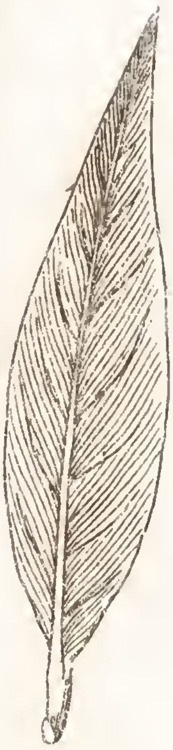

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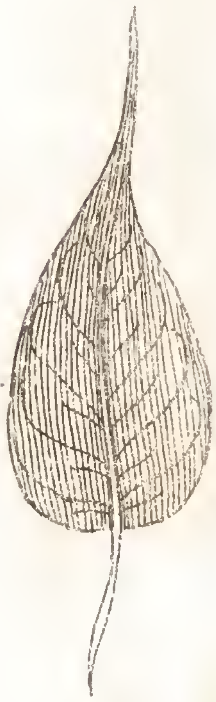

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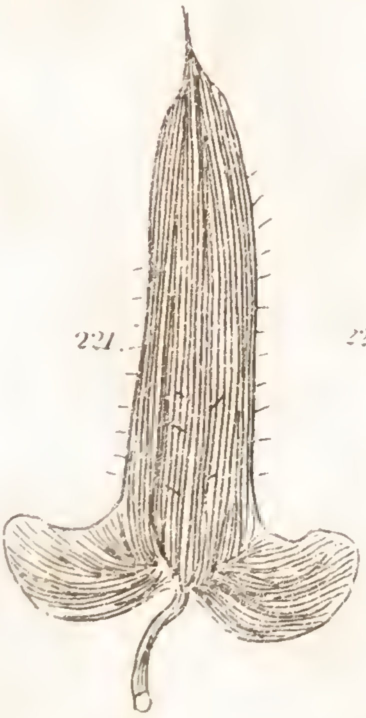

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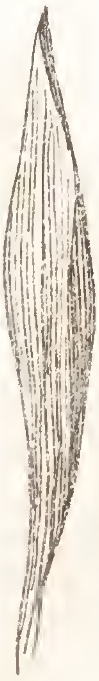

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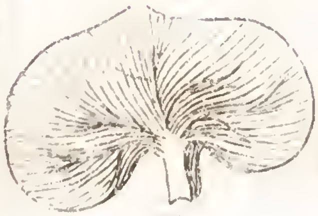

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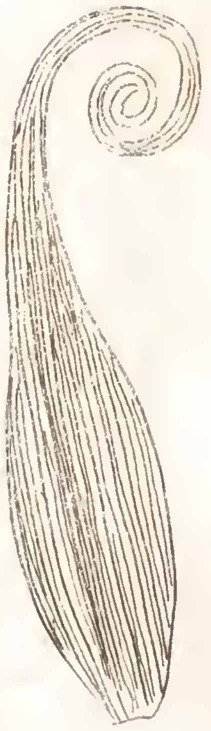

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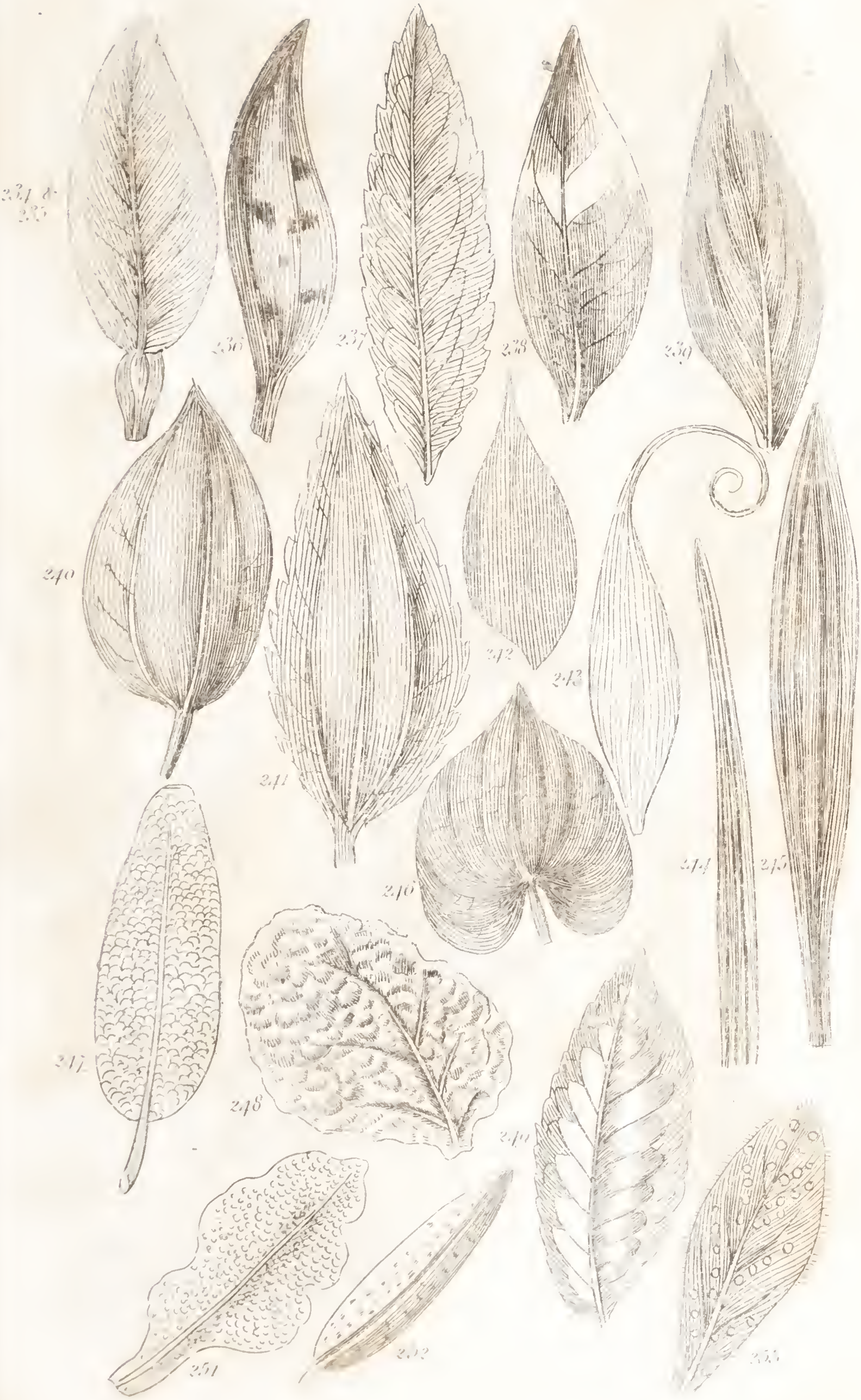
Plate 34



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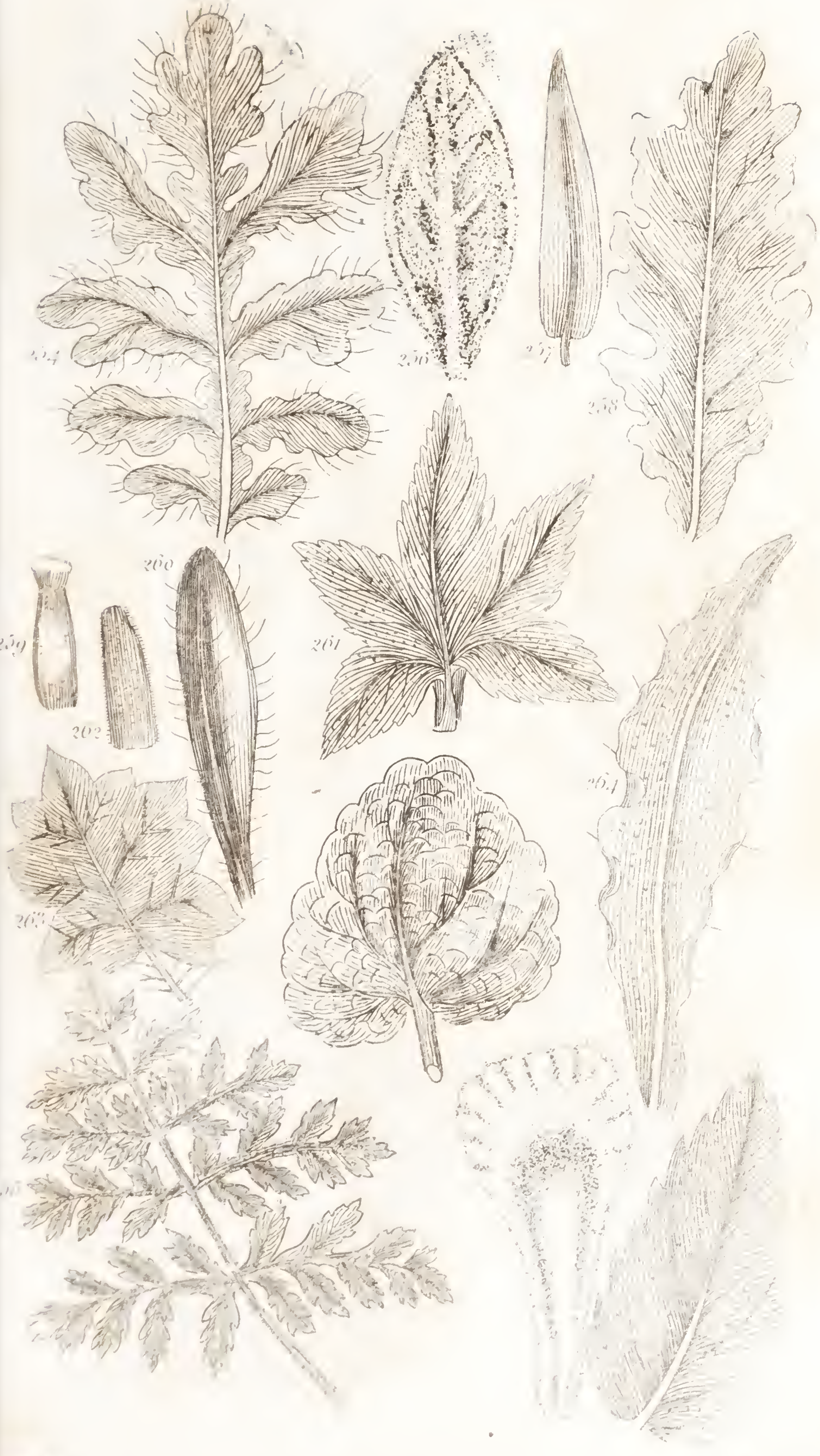

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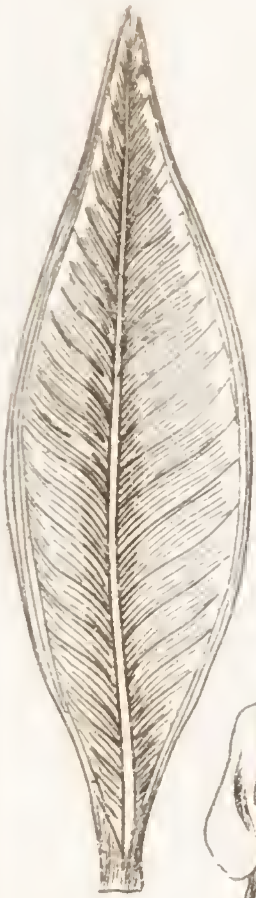

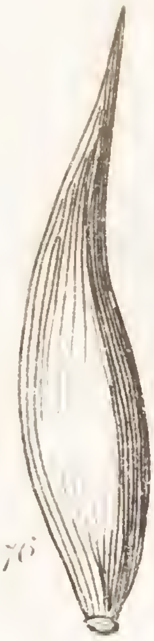

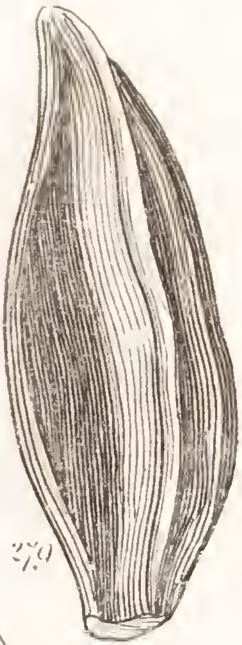

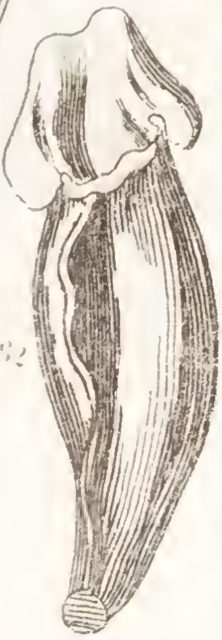

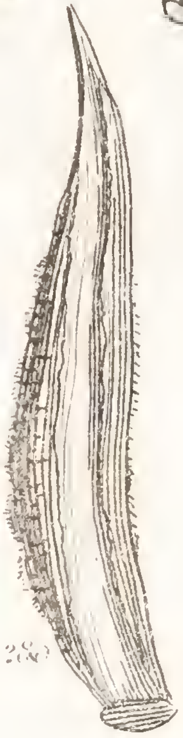

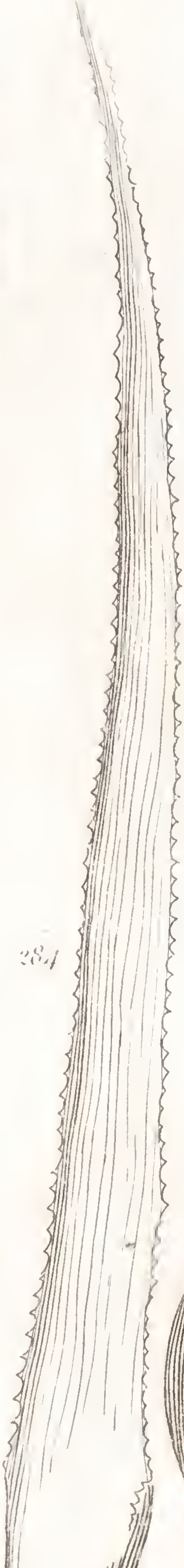

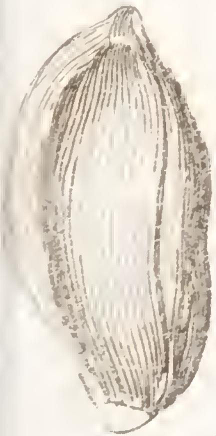

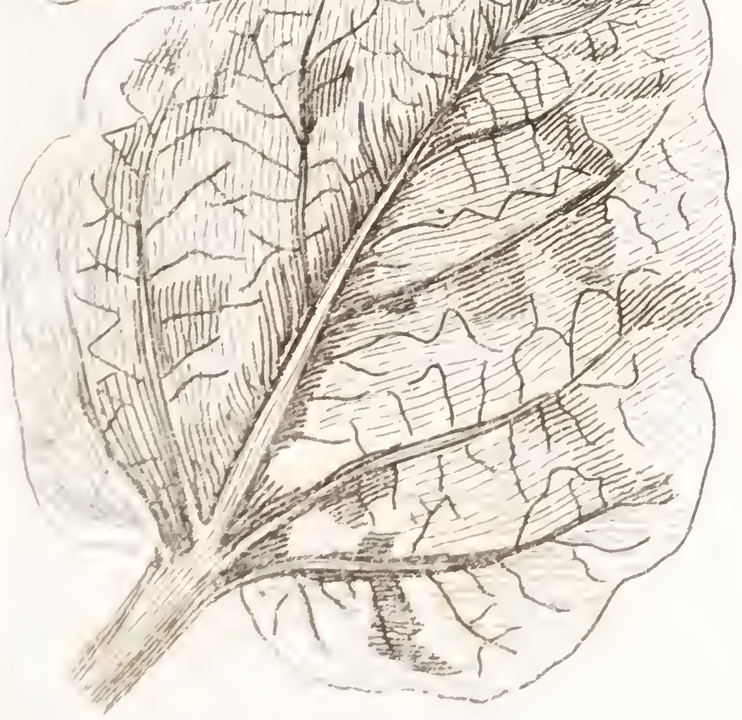

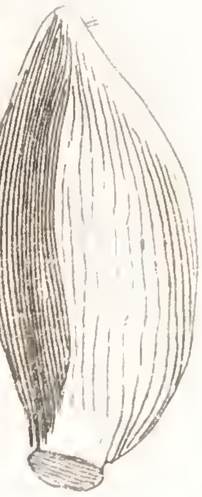

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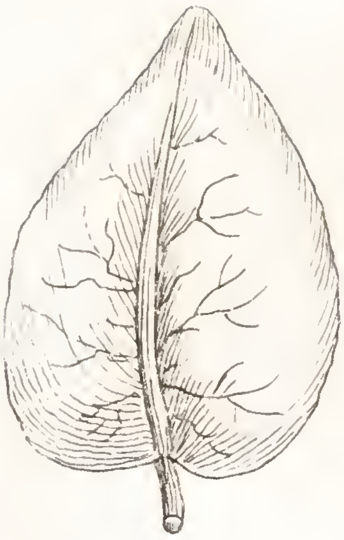

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Plate 37.

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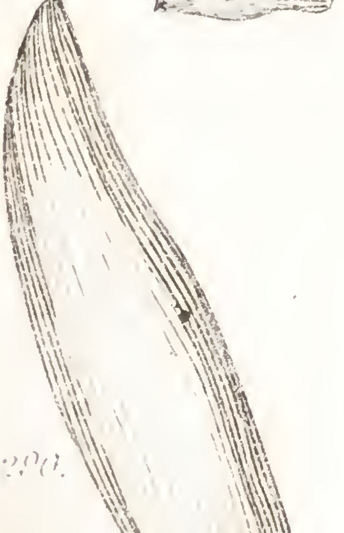
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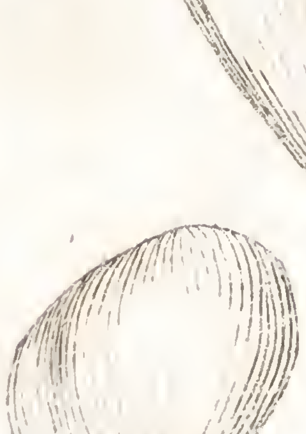
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Plate 38.

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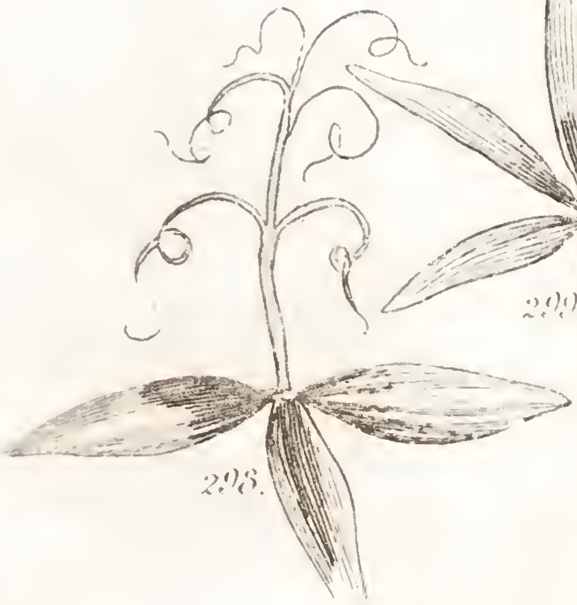
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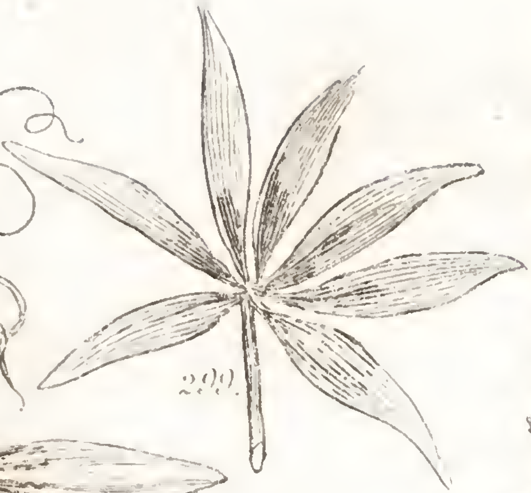
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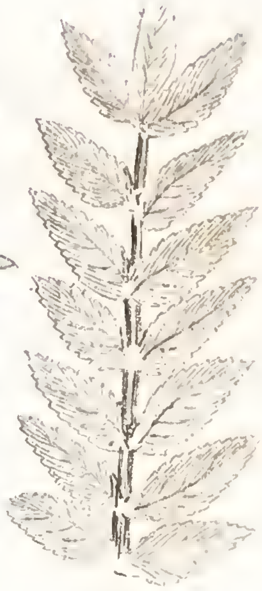
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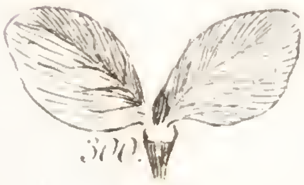
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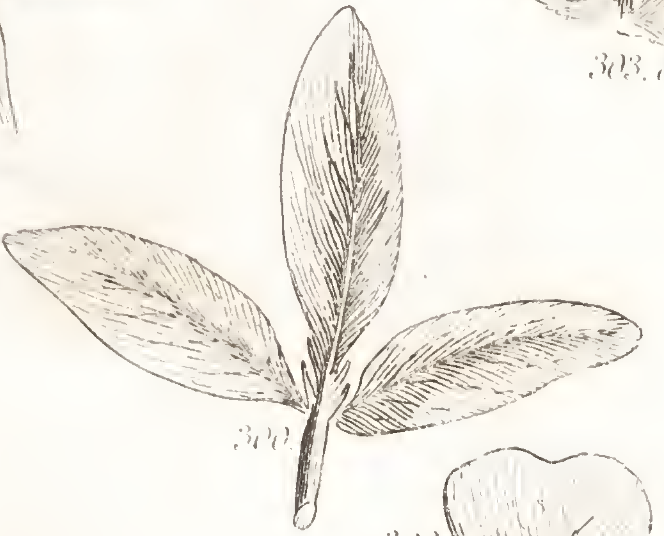
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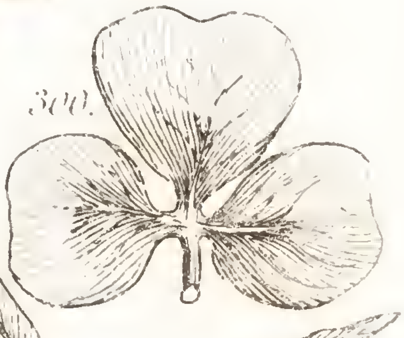
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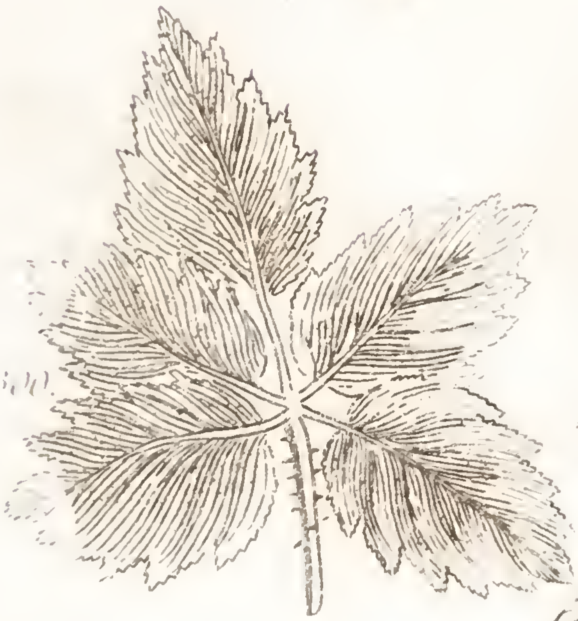
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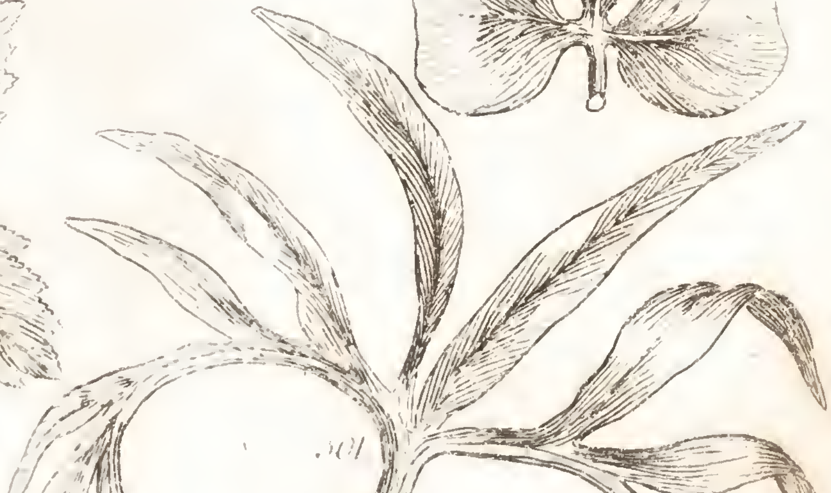
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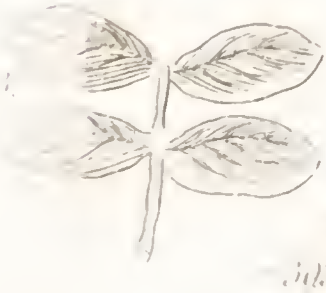
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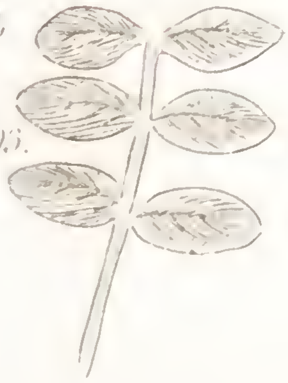
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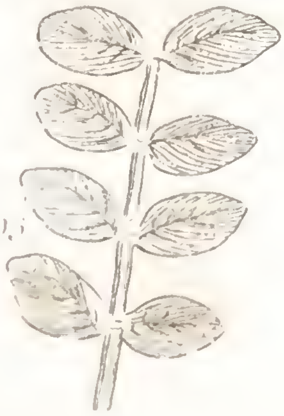
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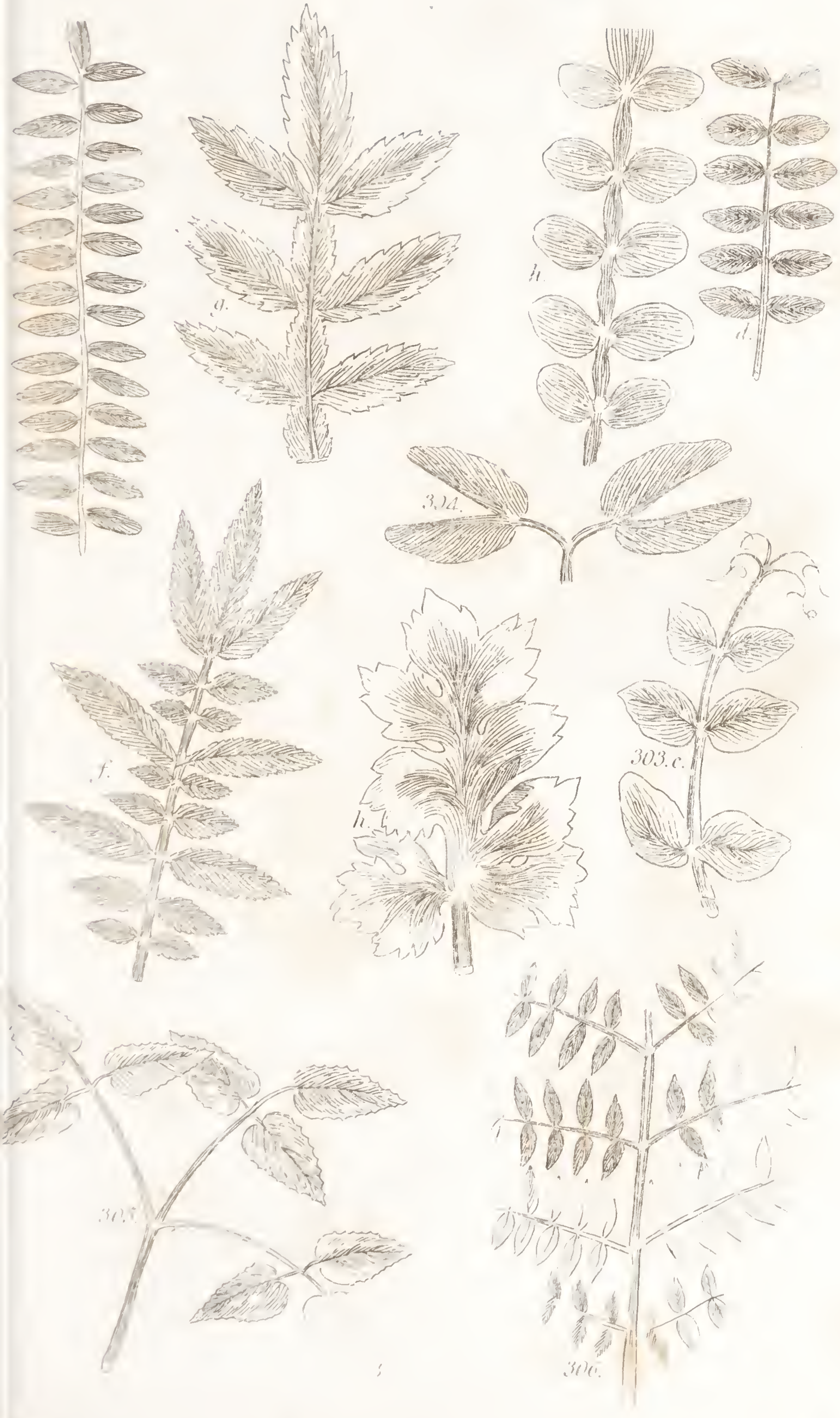

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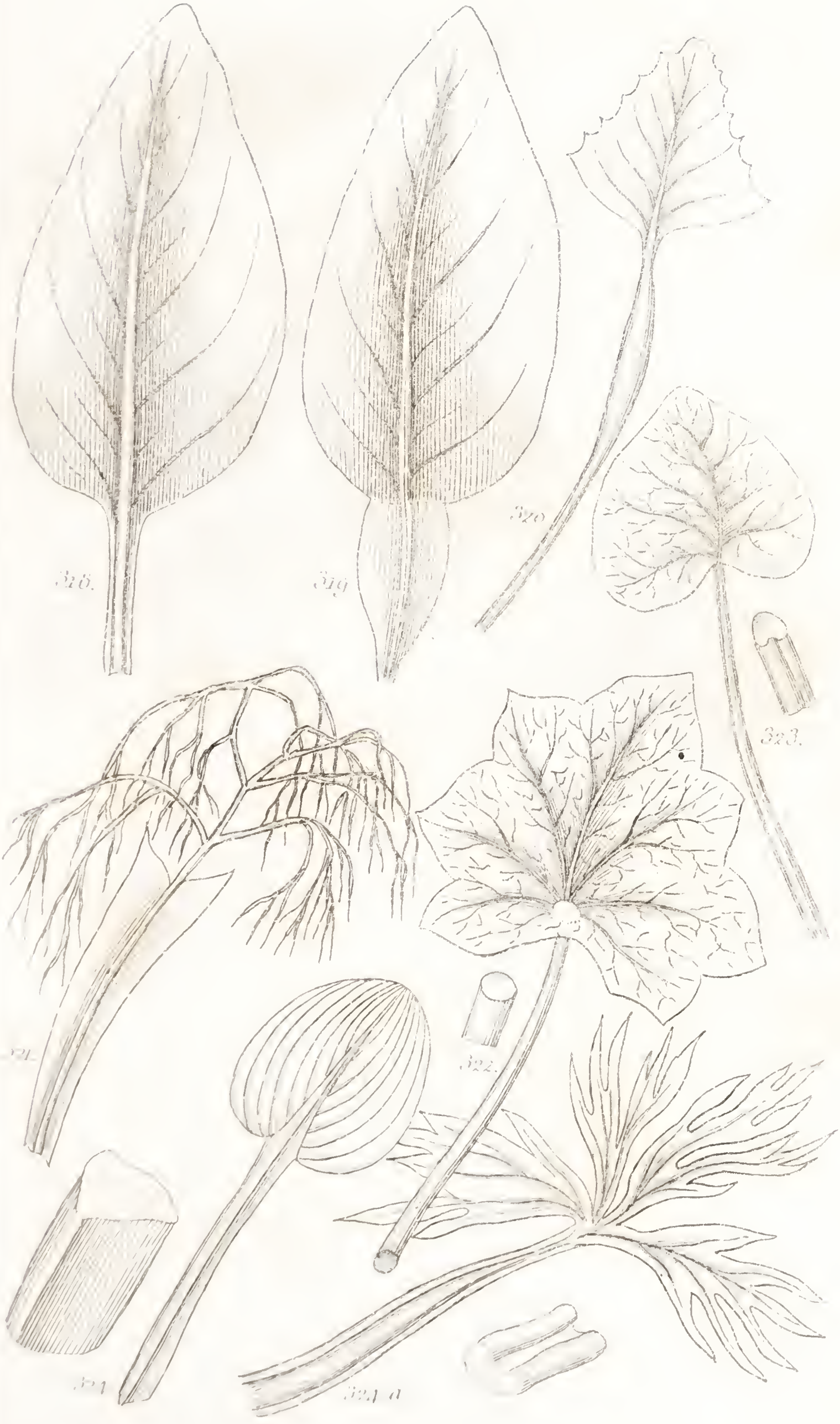

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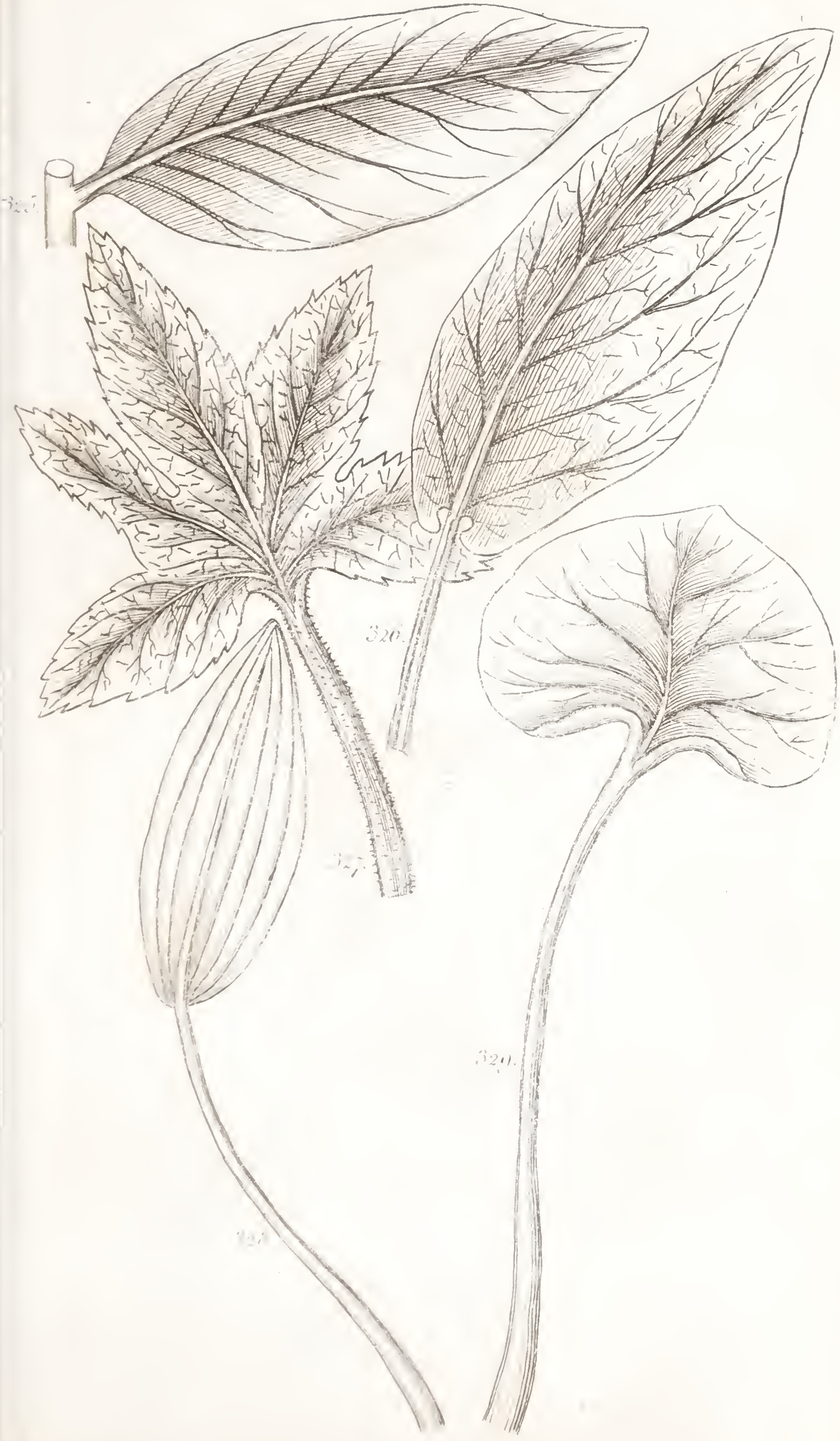

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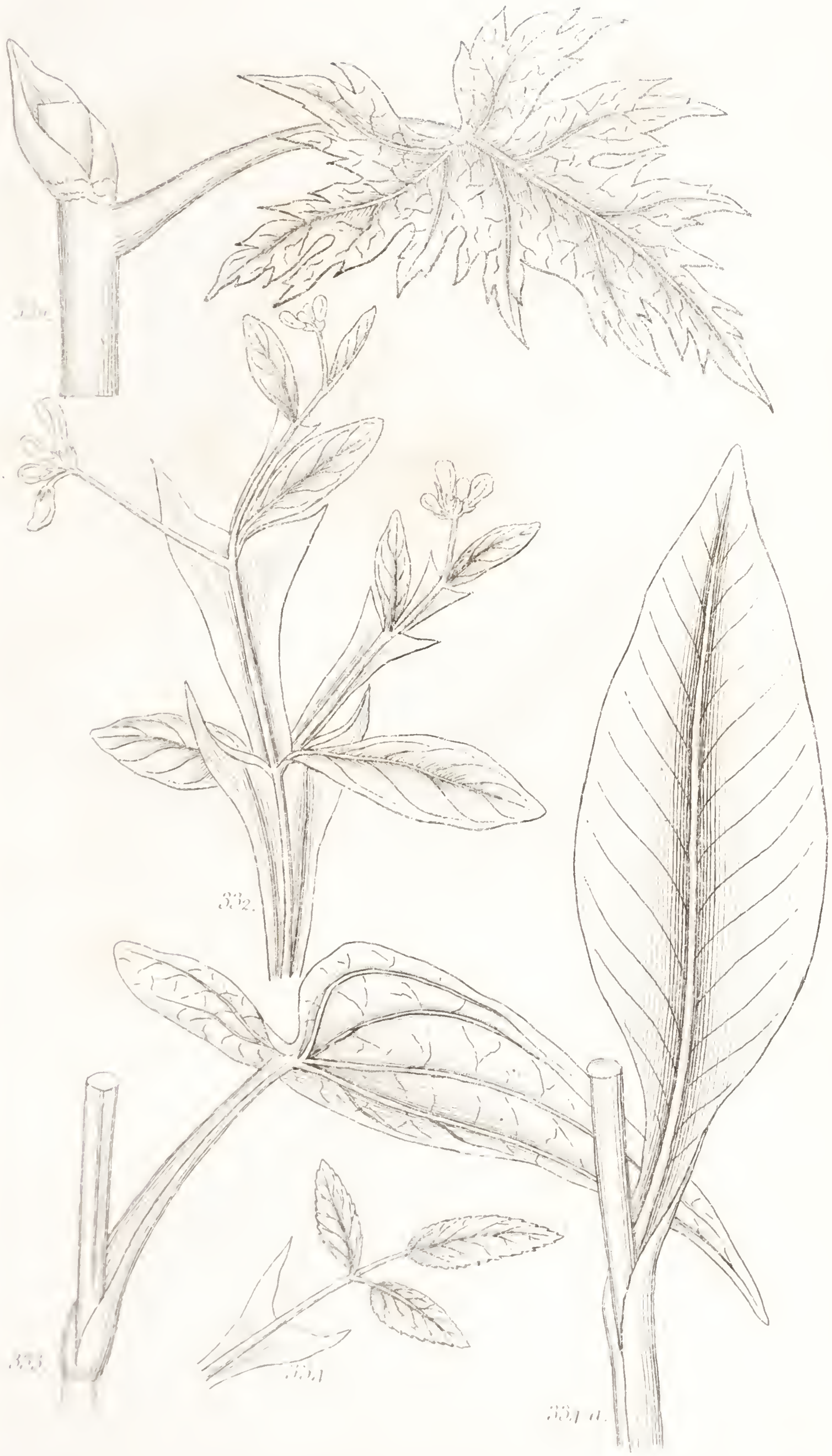
Plate 43.



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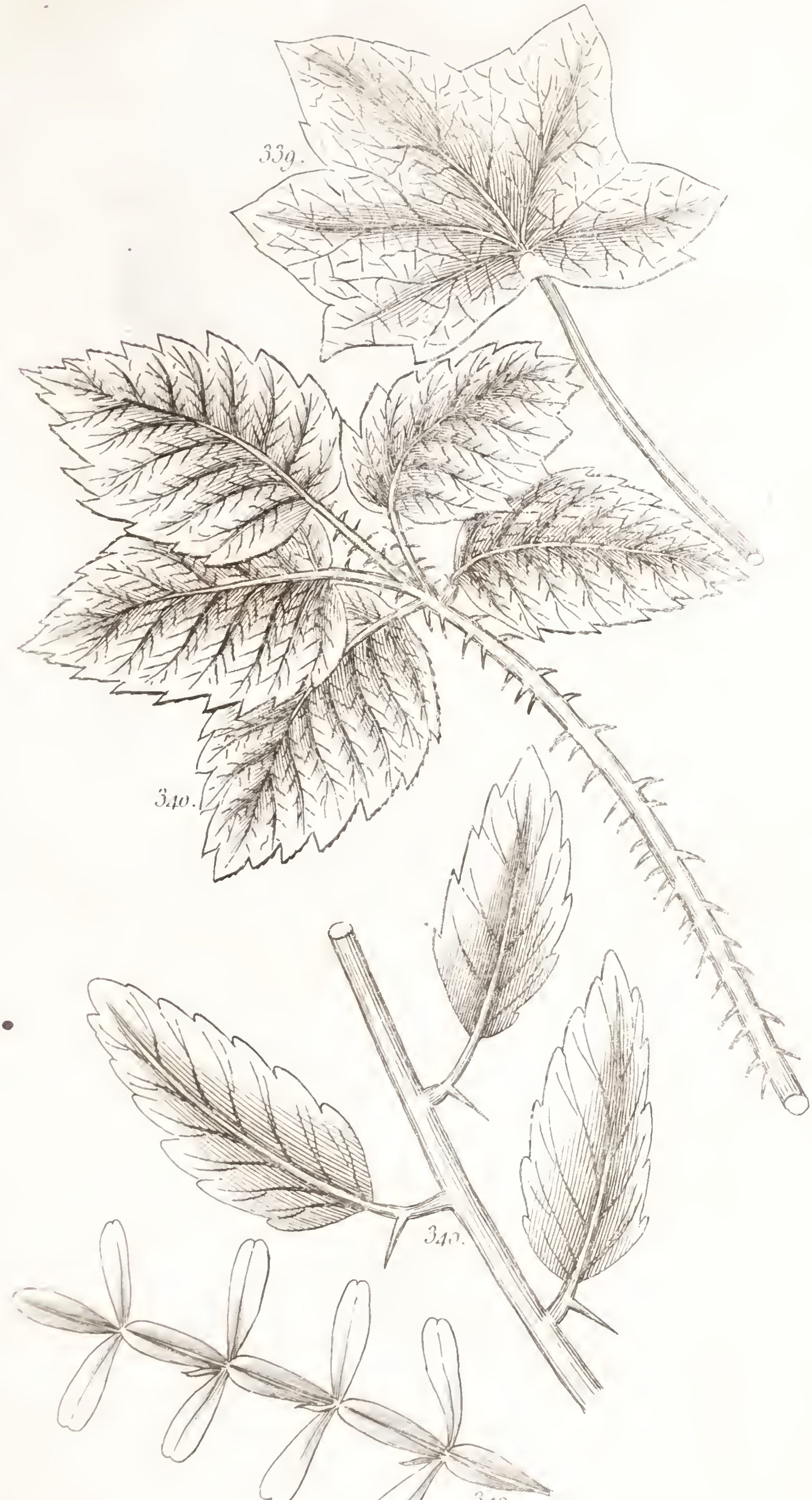

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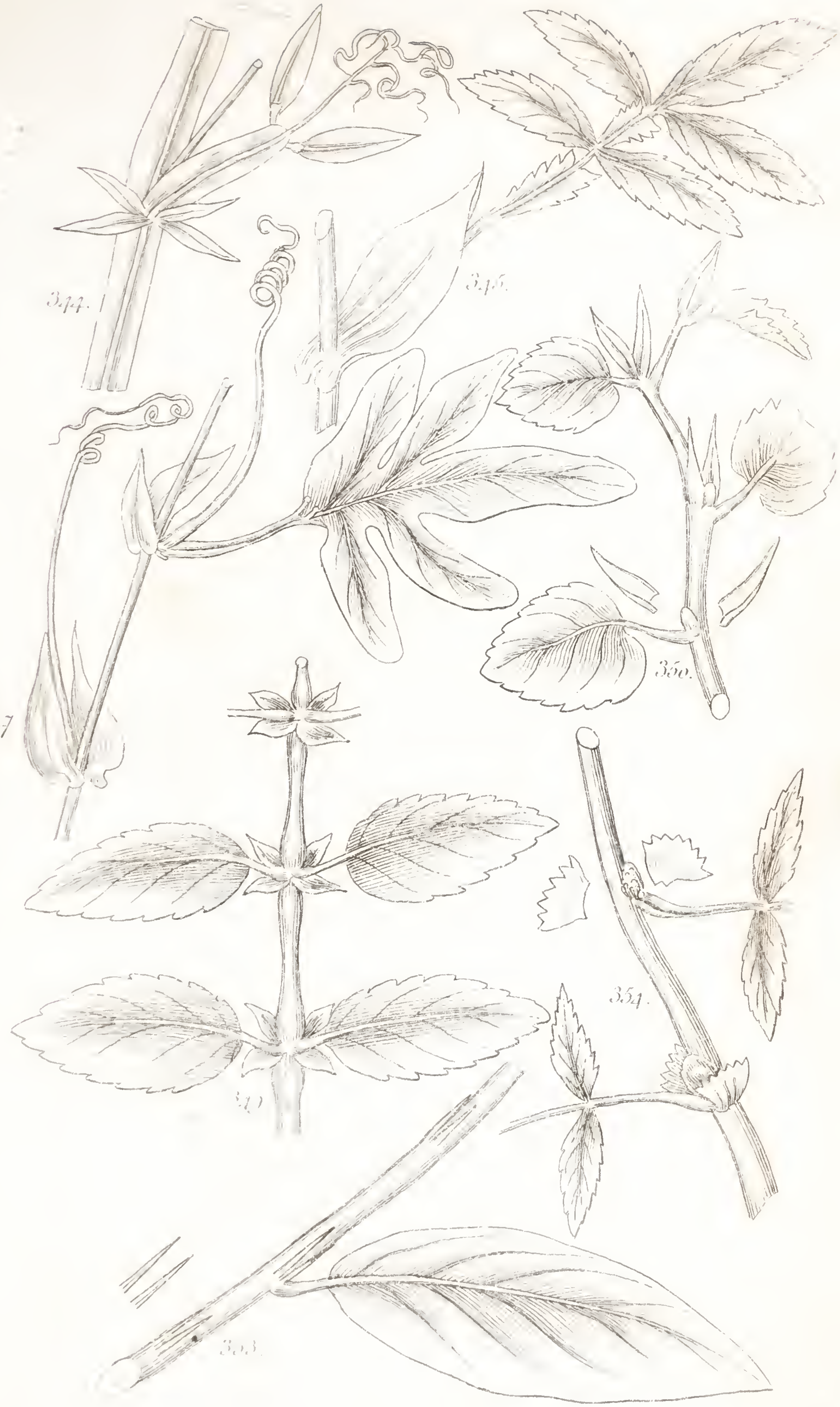
Plate 16.



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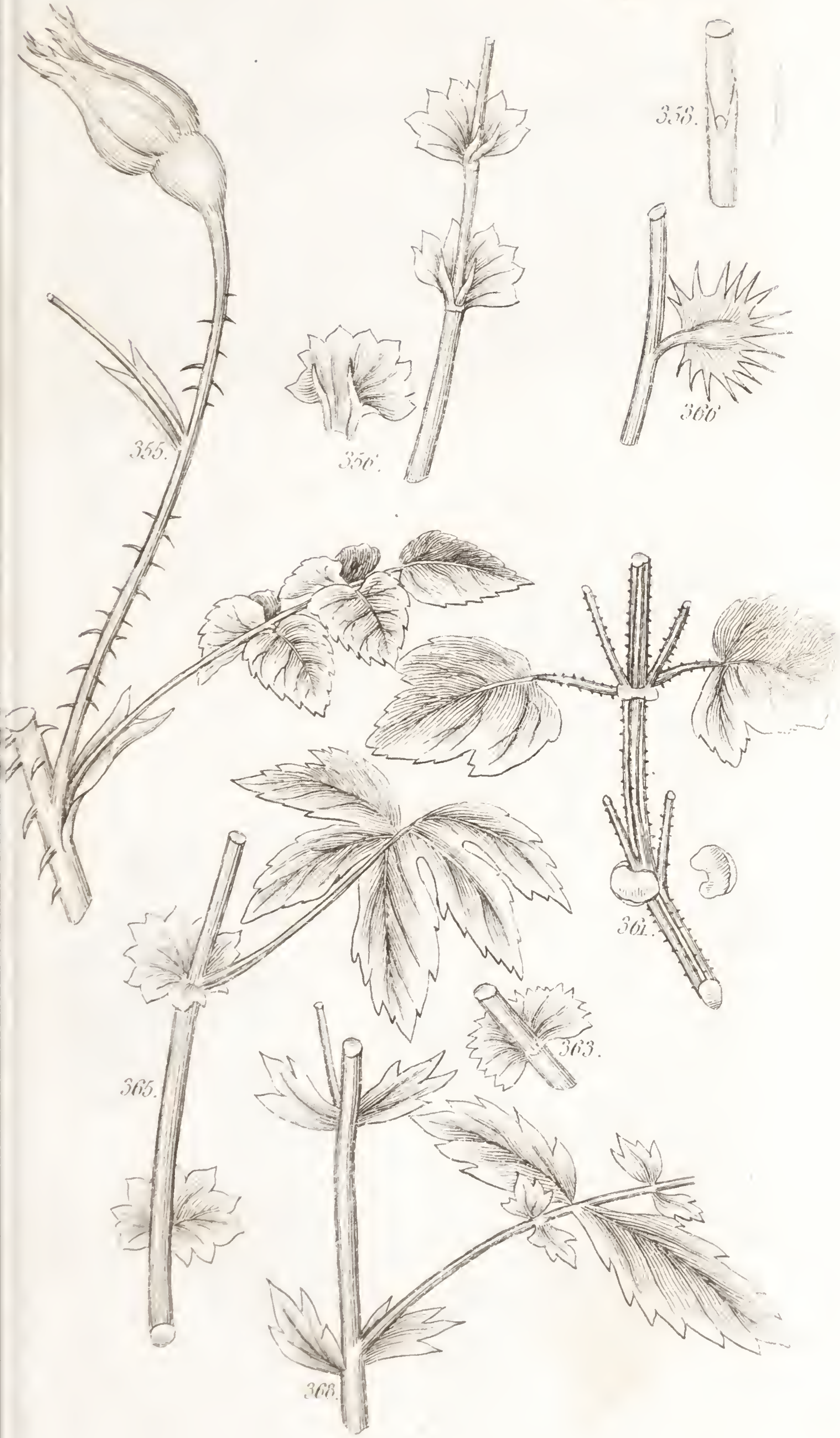

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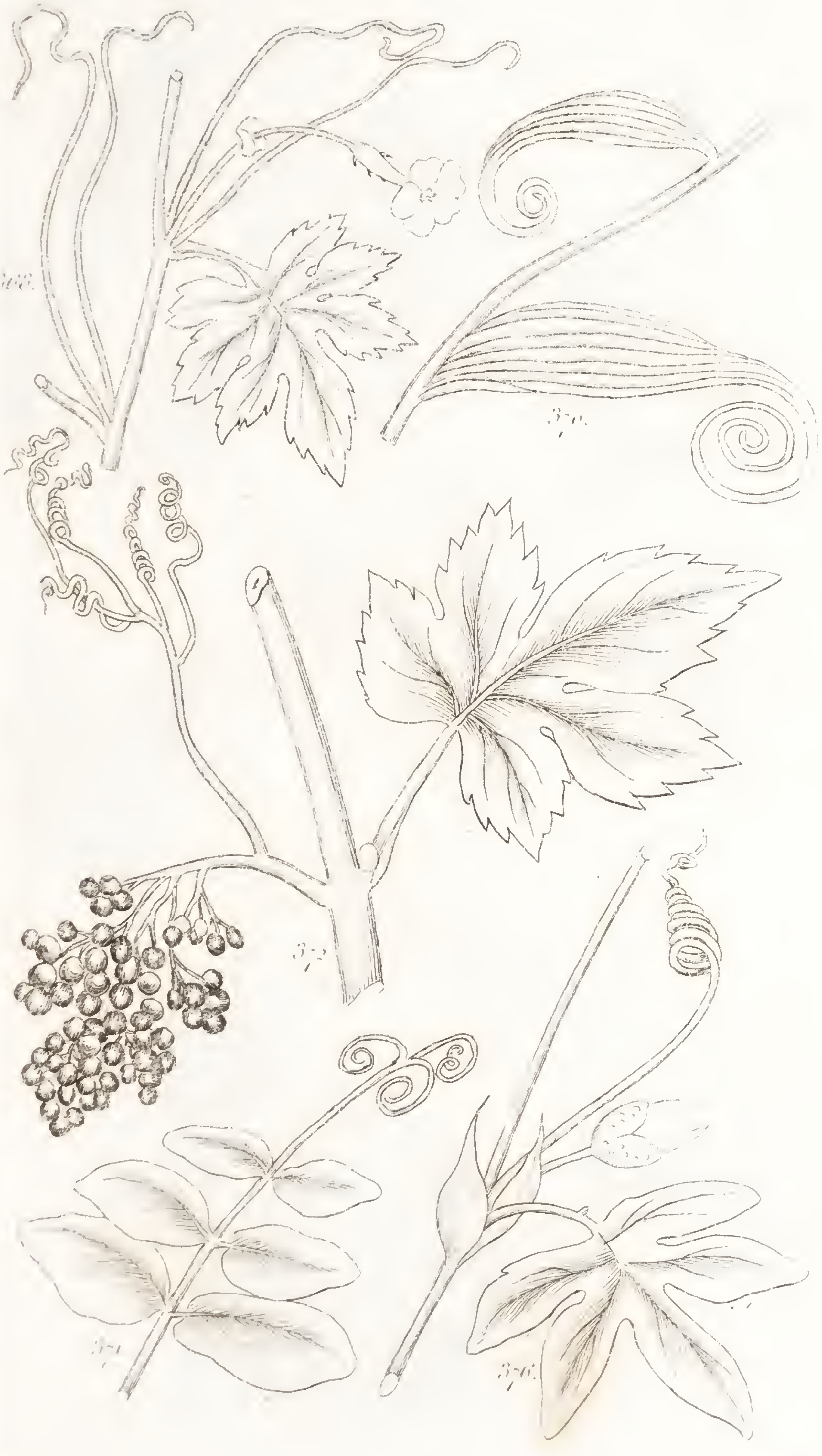

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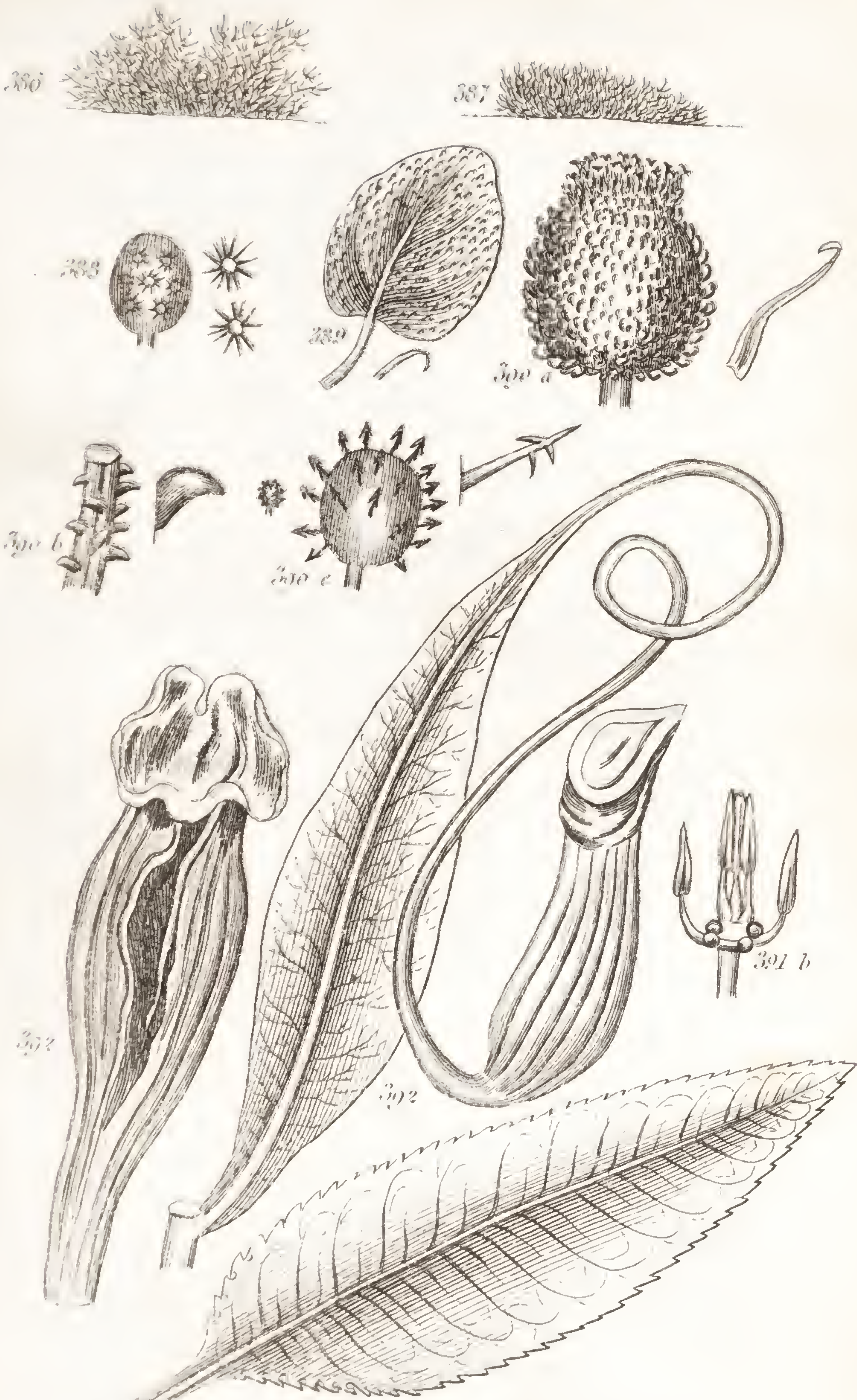

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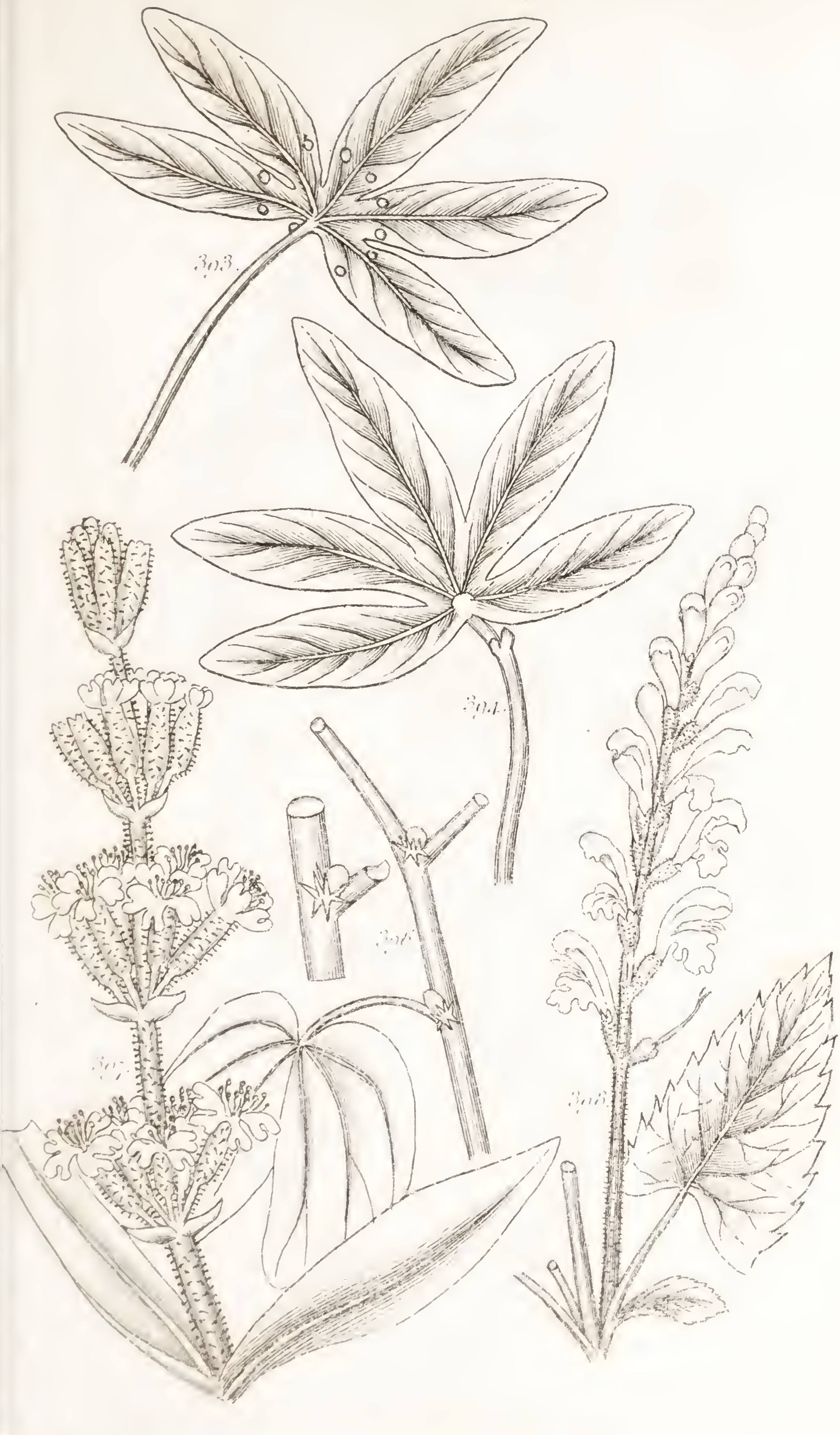
Plate 51.



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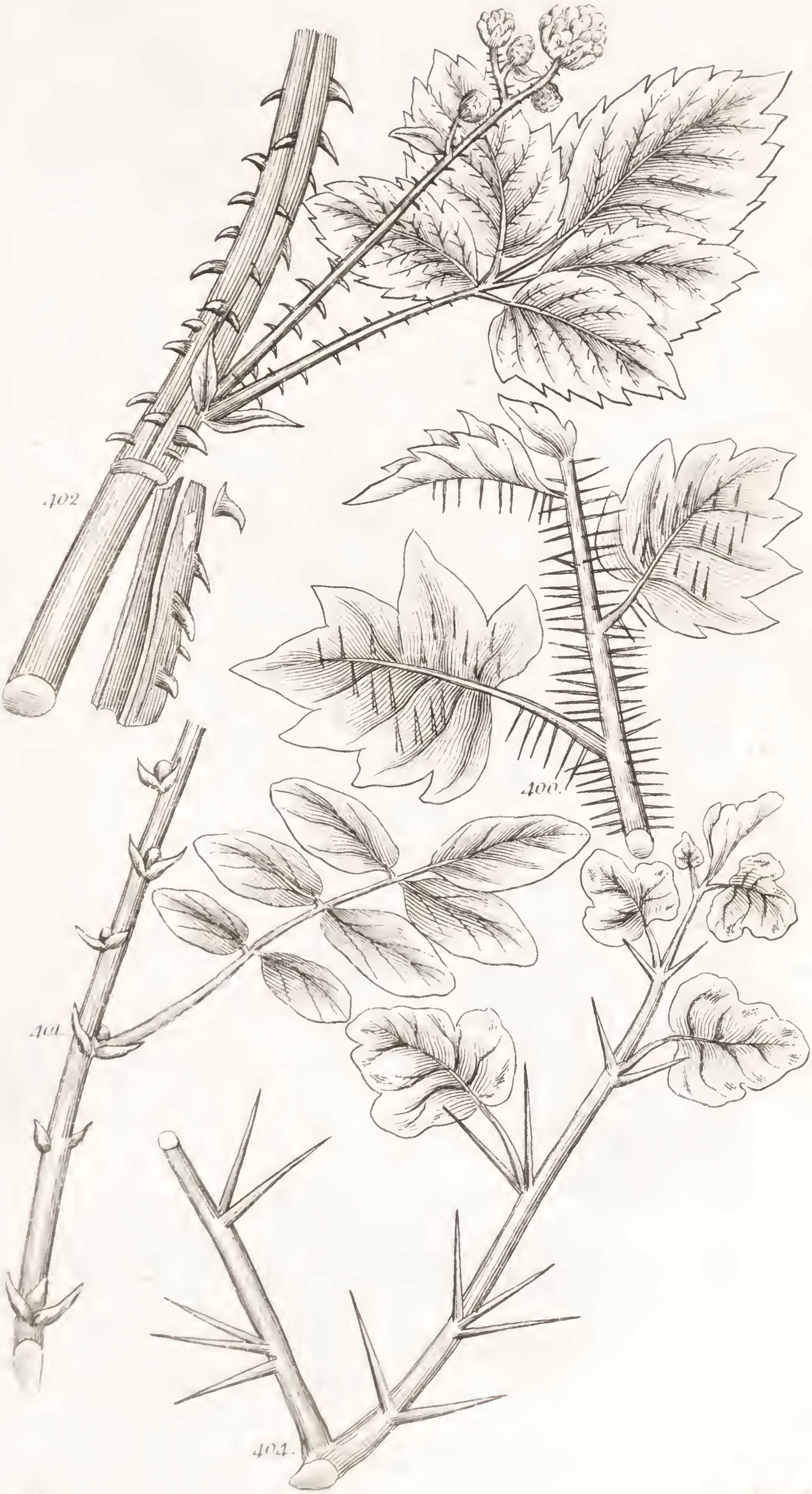

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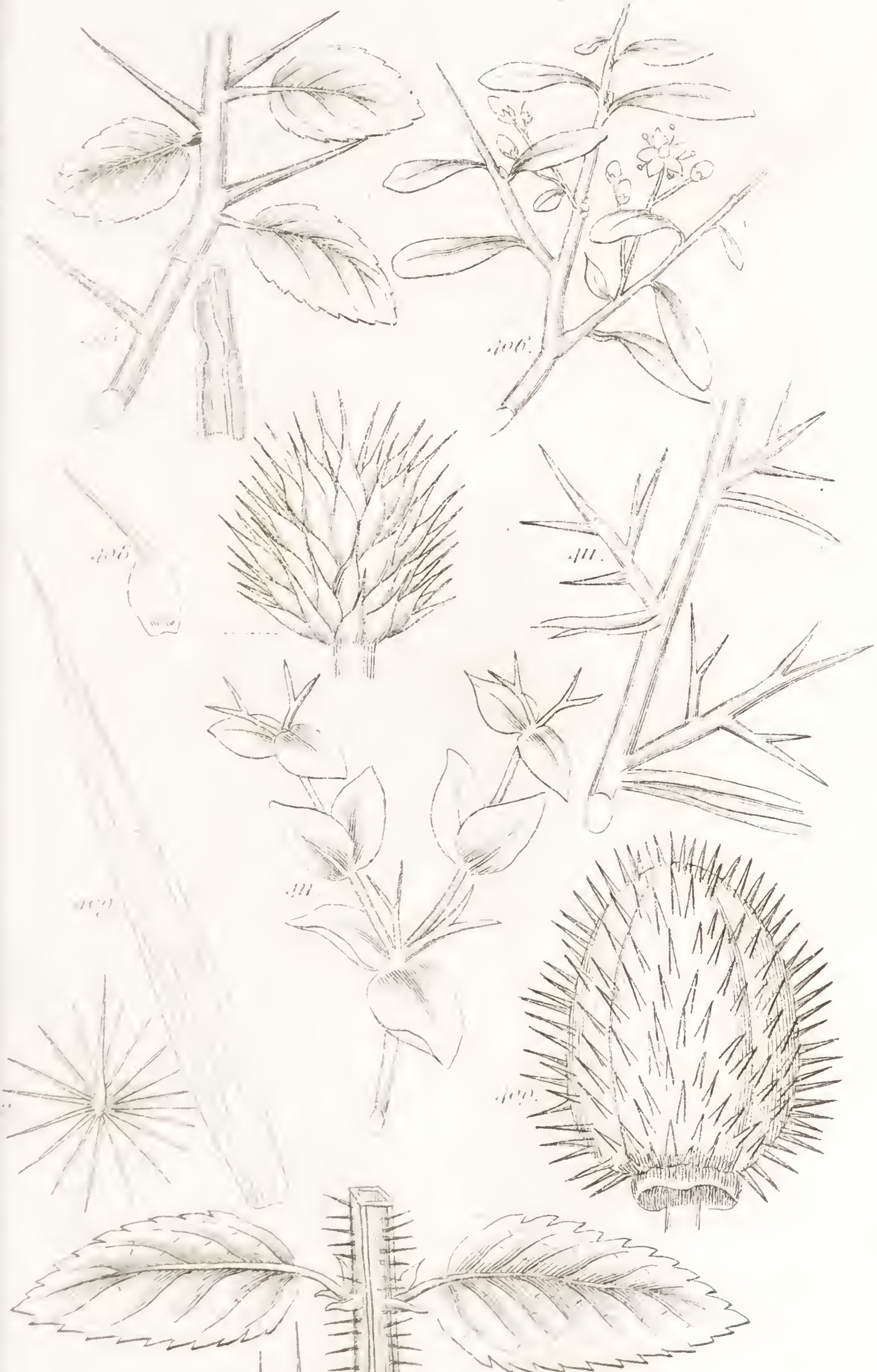

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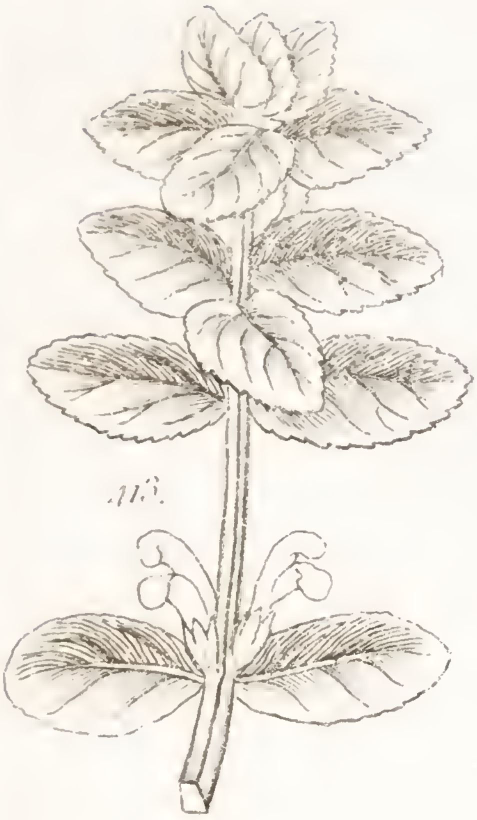

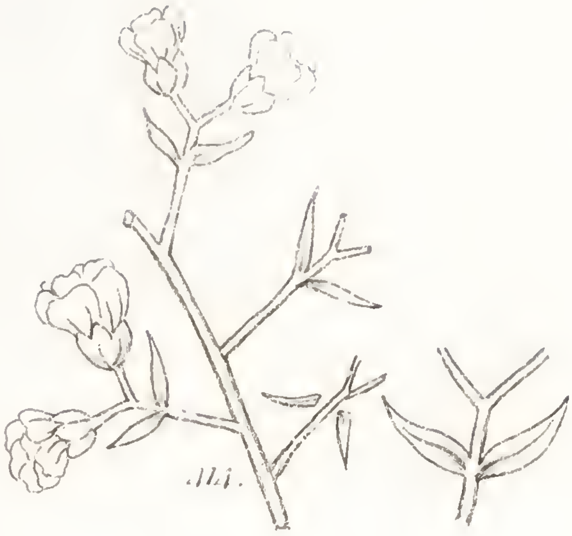

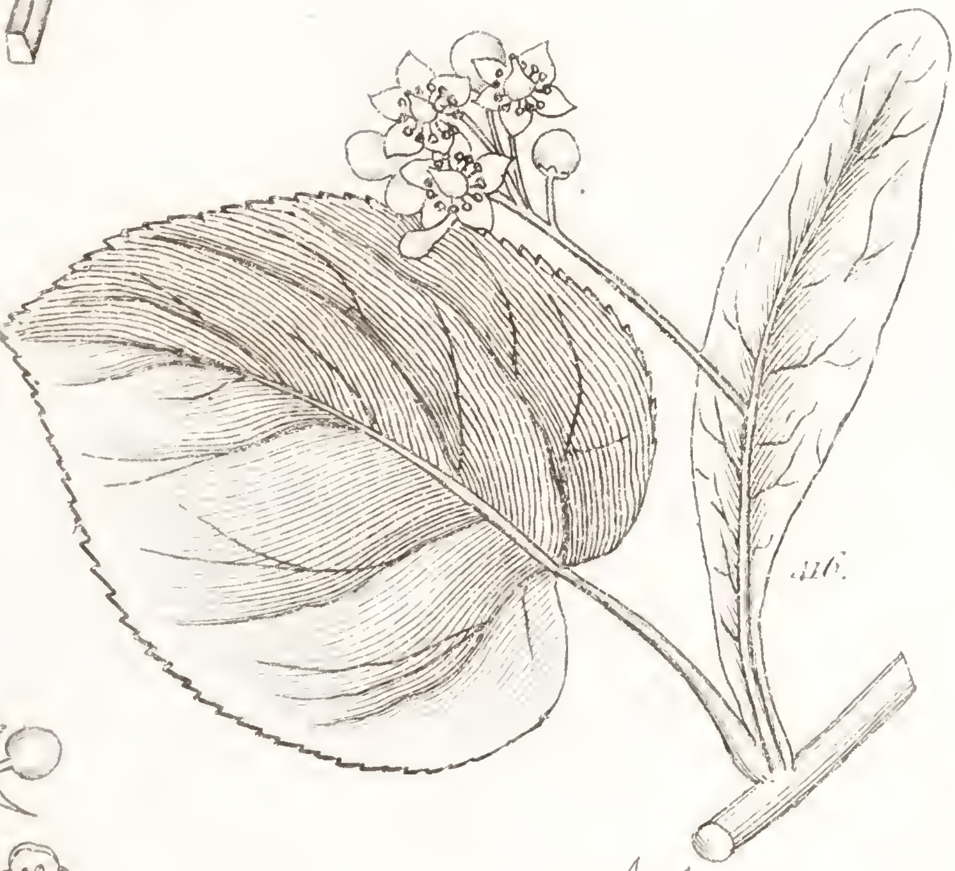

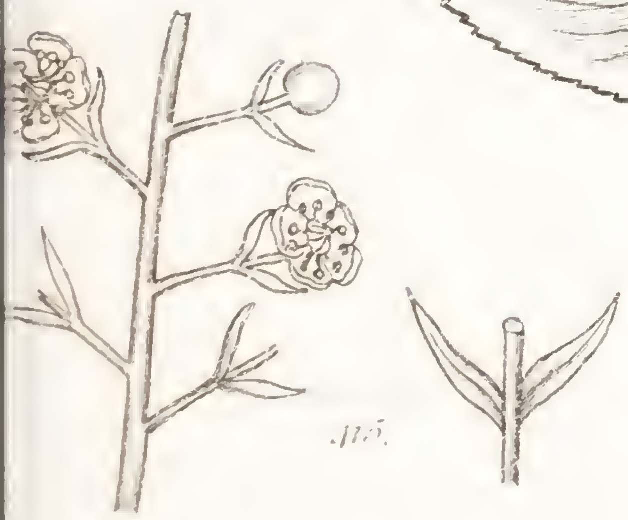

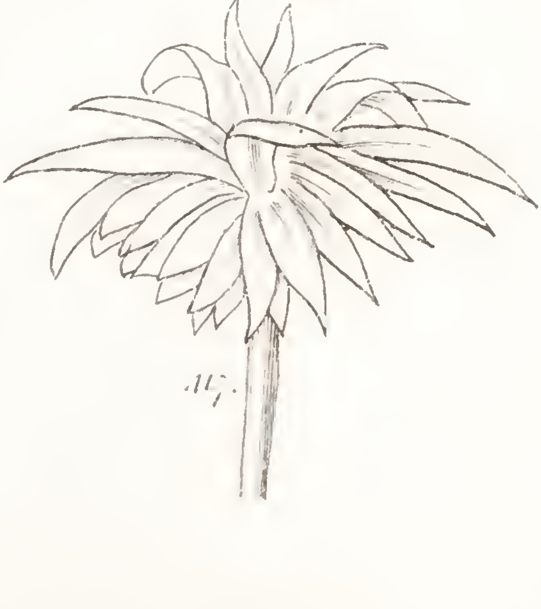

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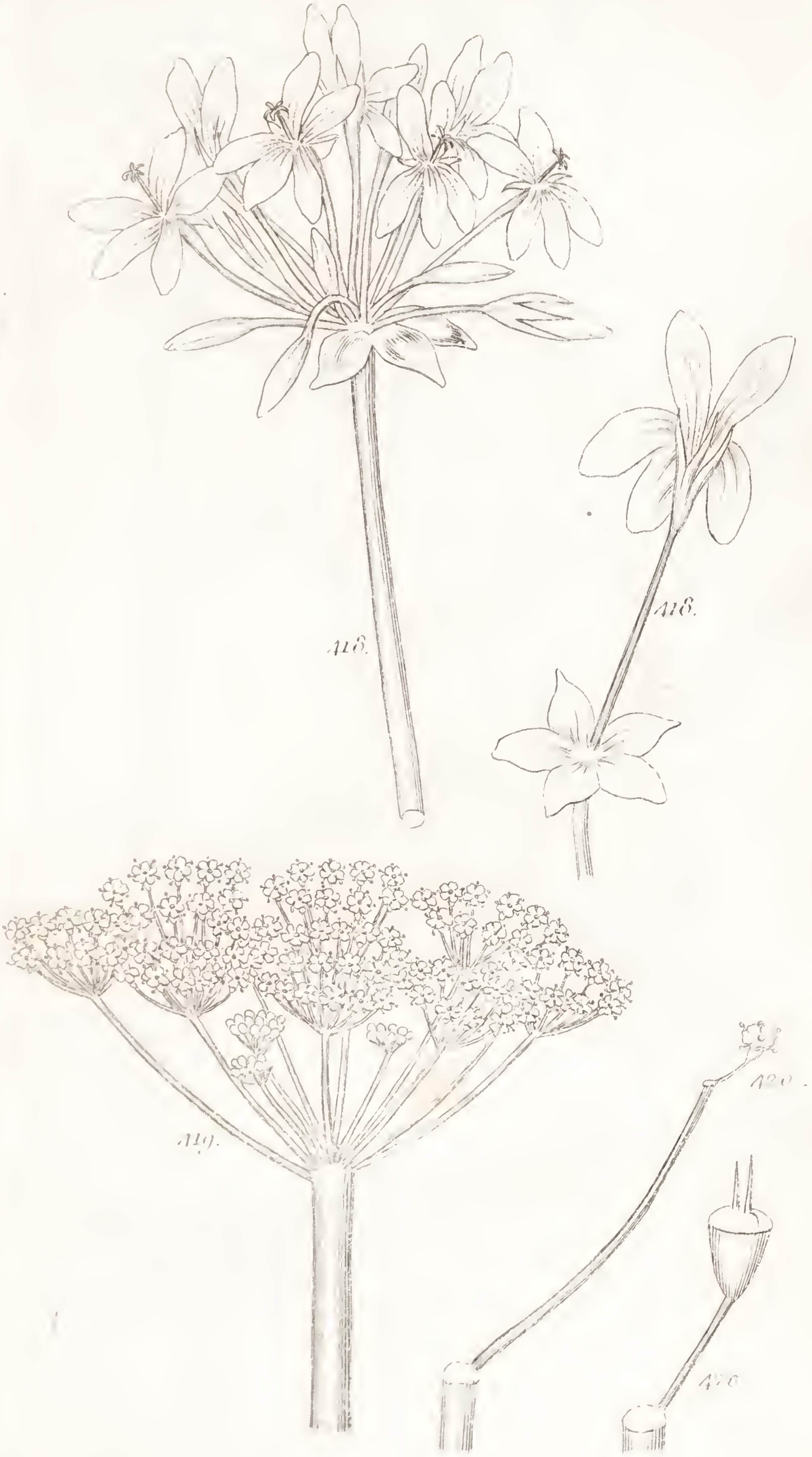
Plate 55.



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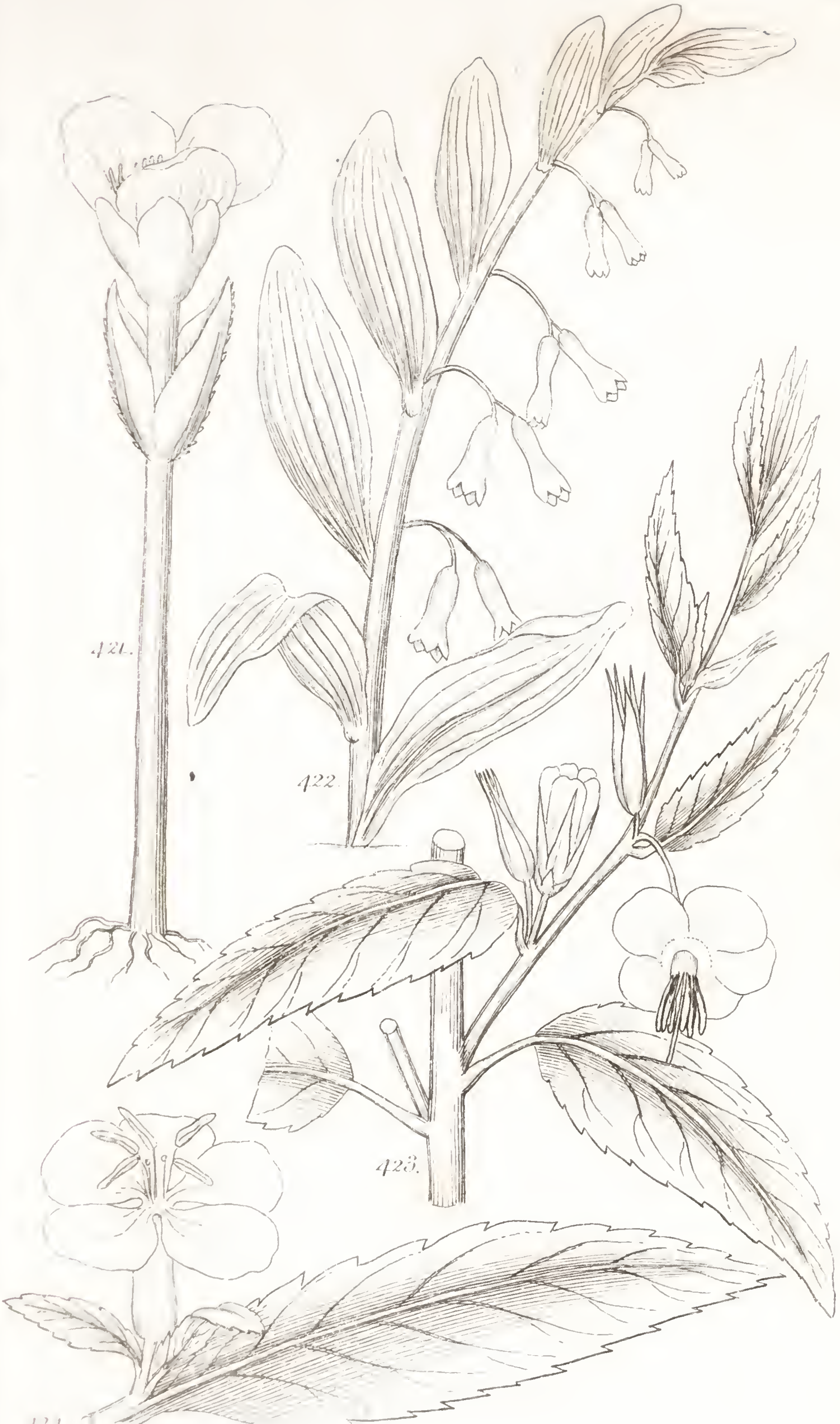

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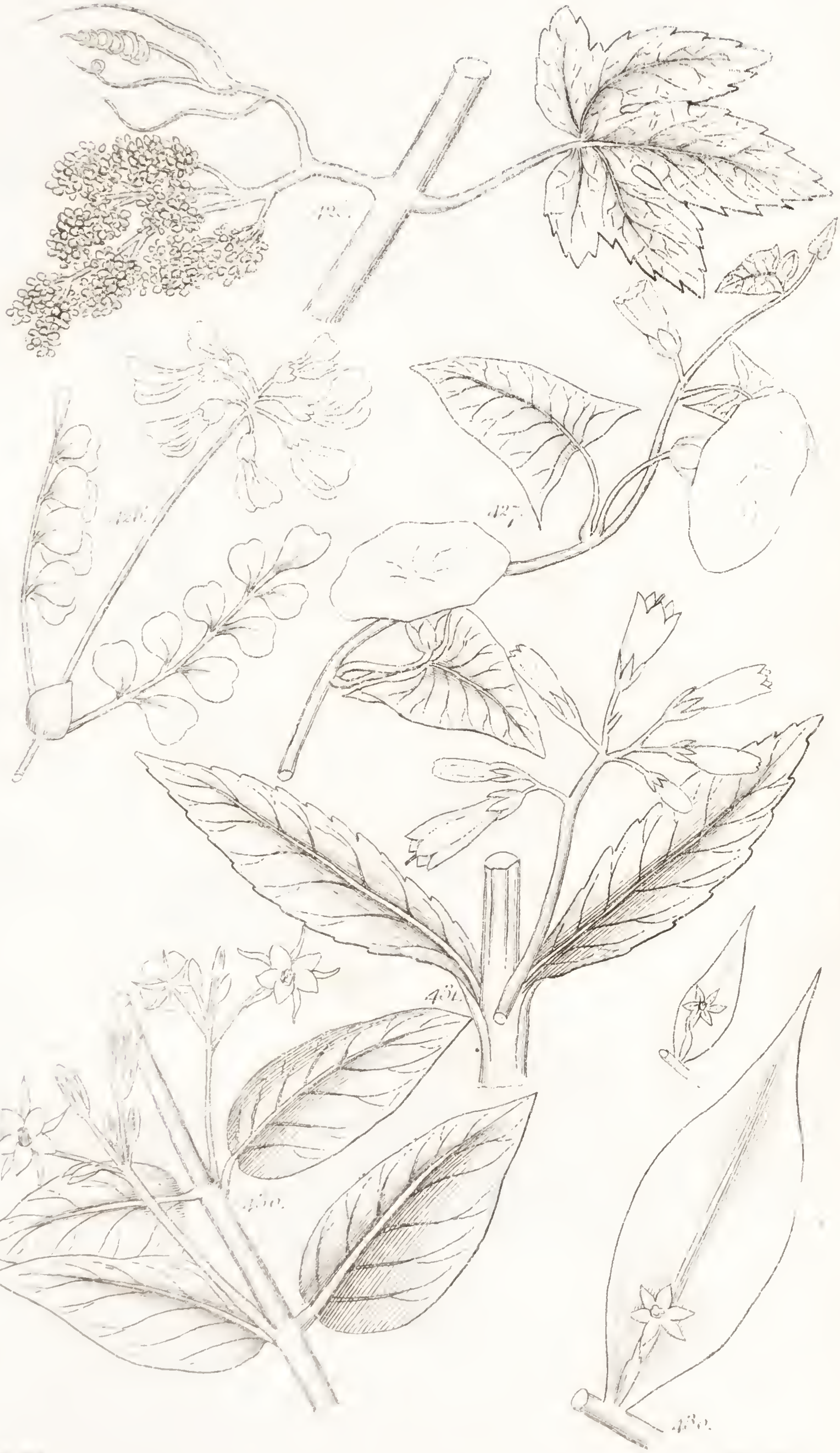
Plate 37.



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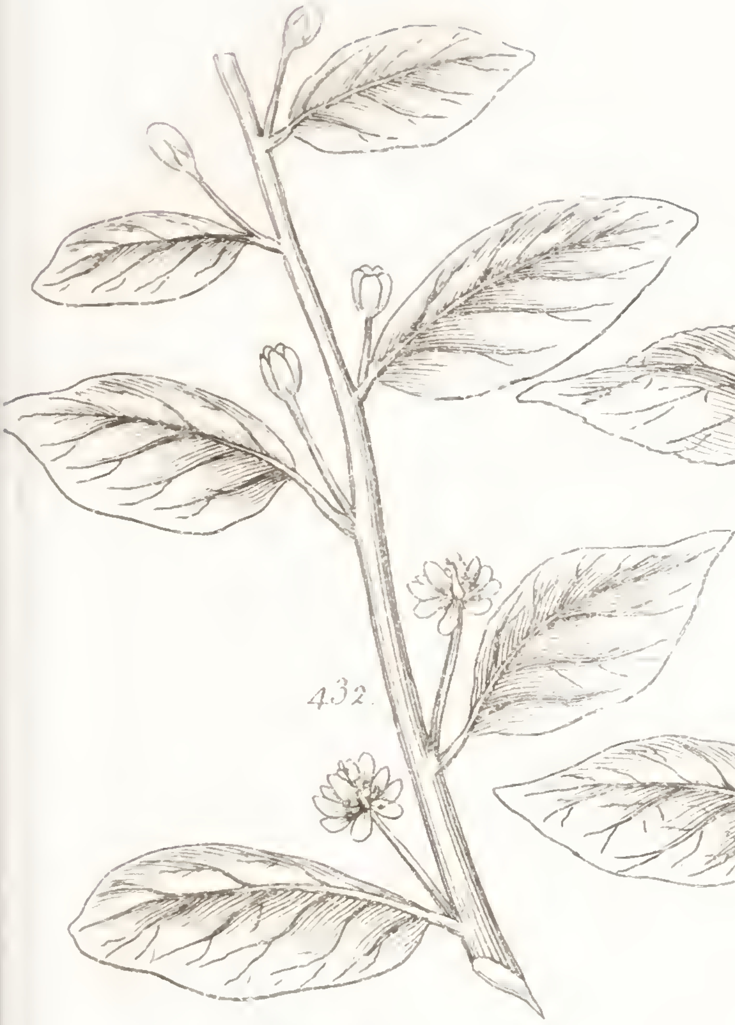

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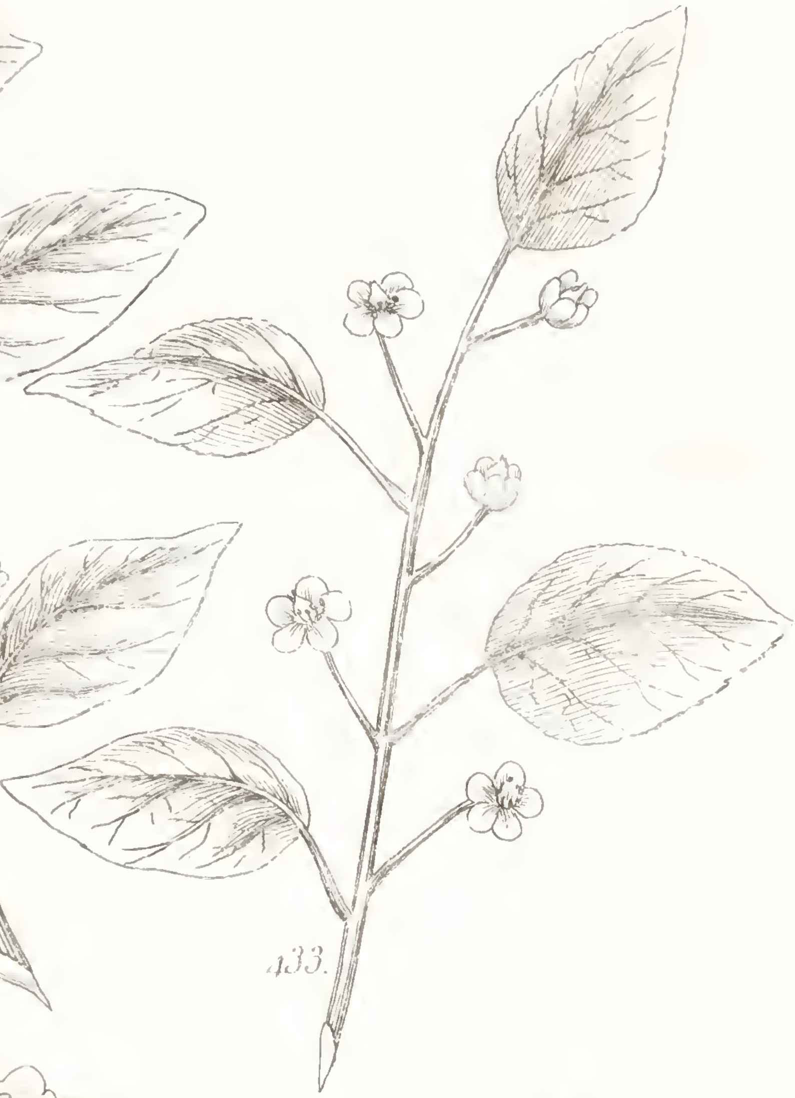

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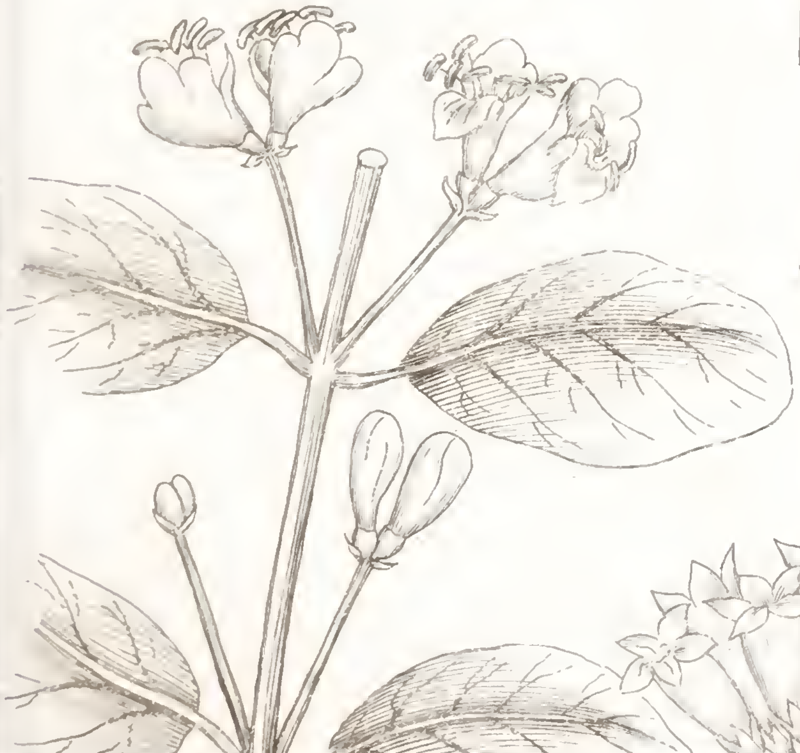

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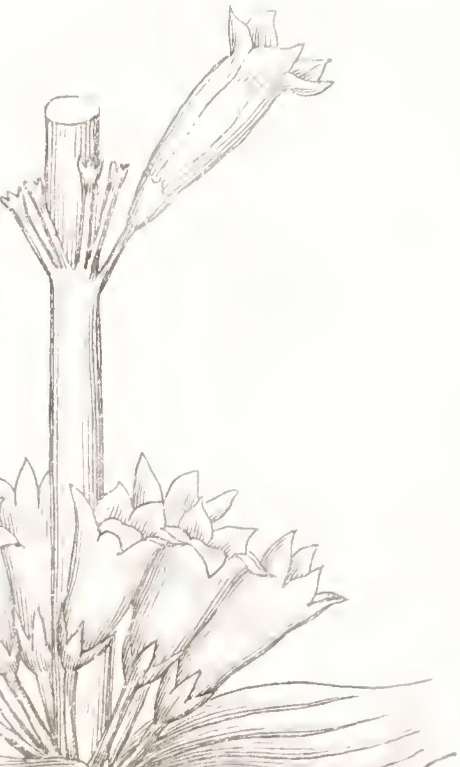

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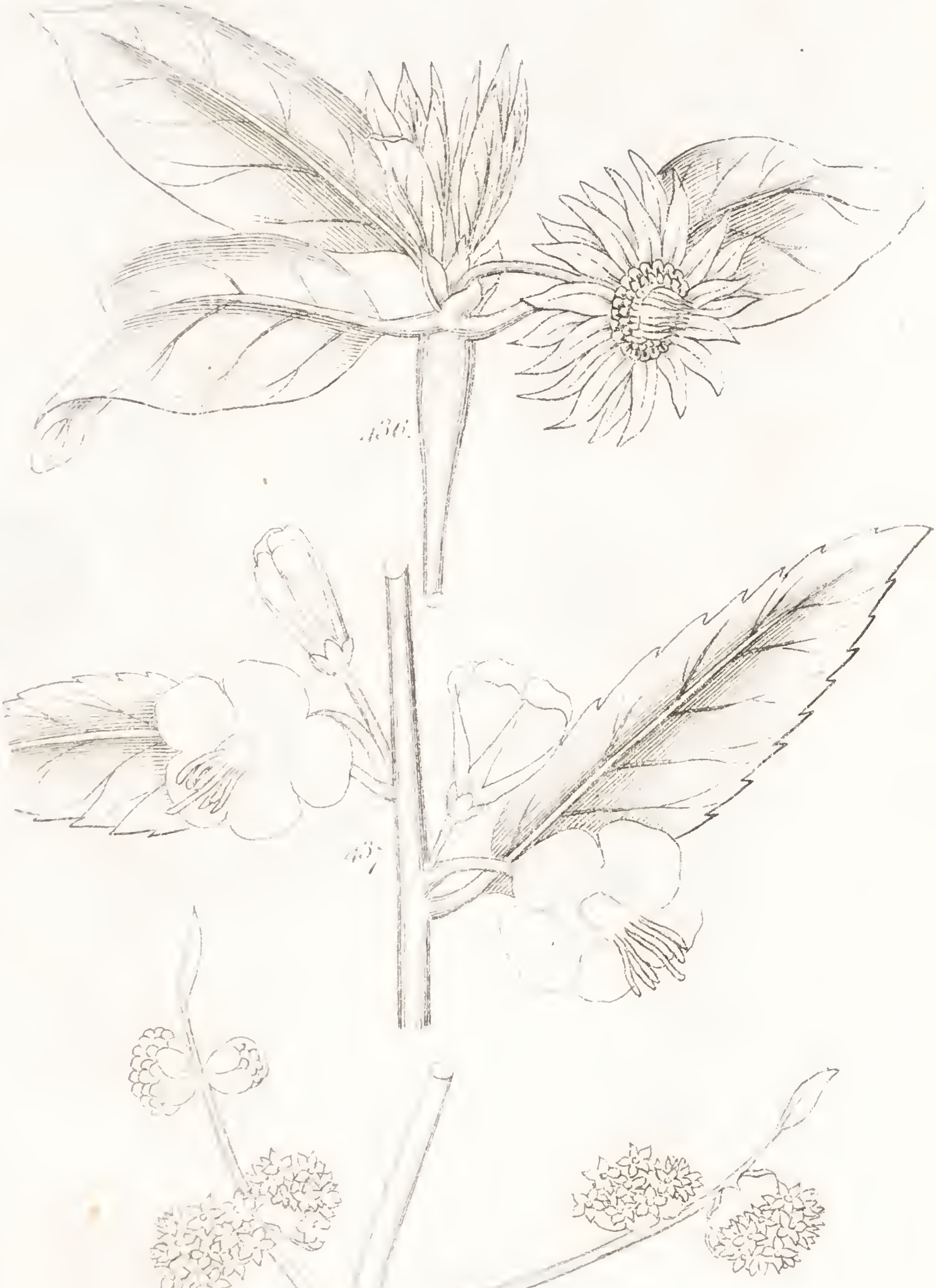
Plate 29



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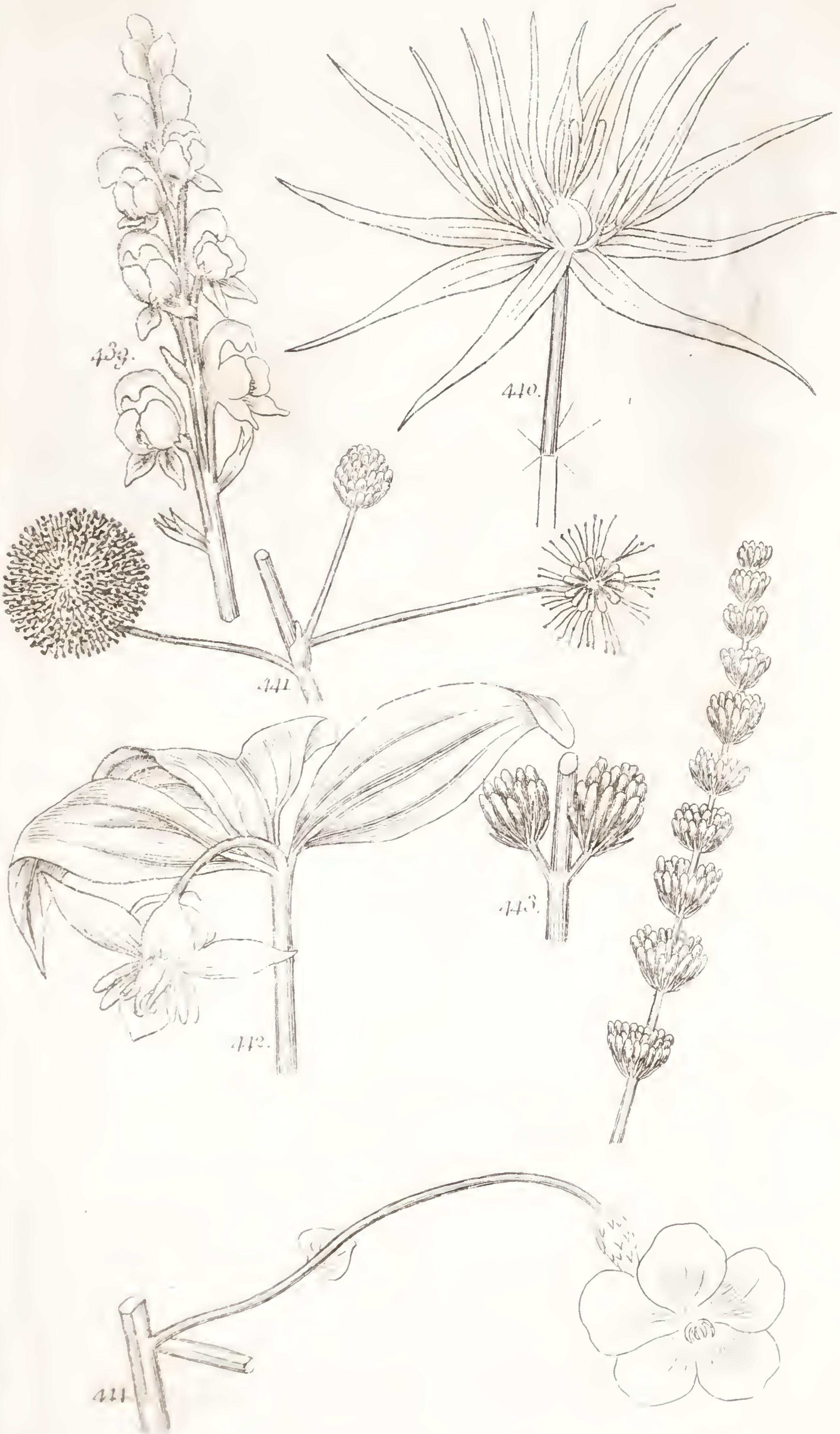

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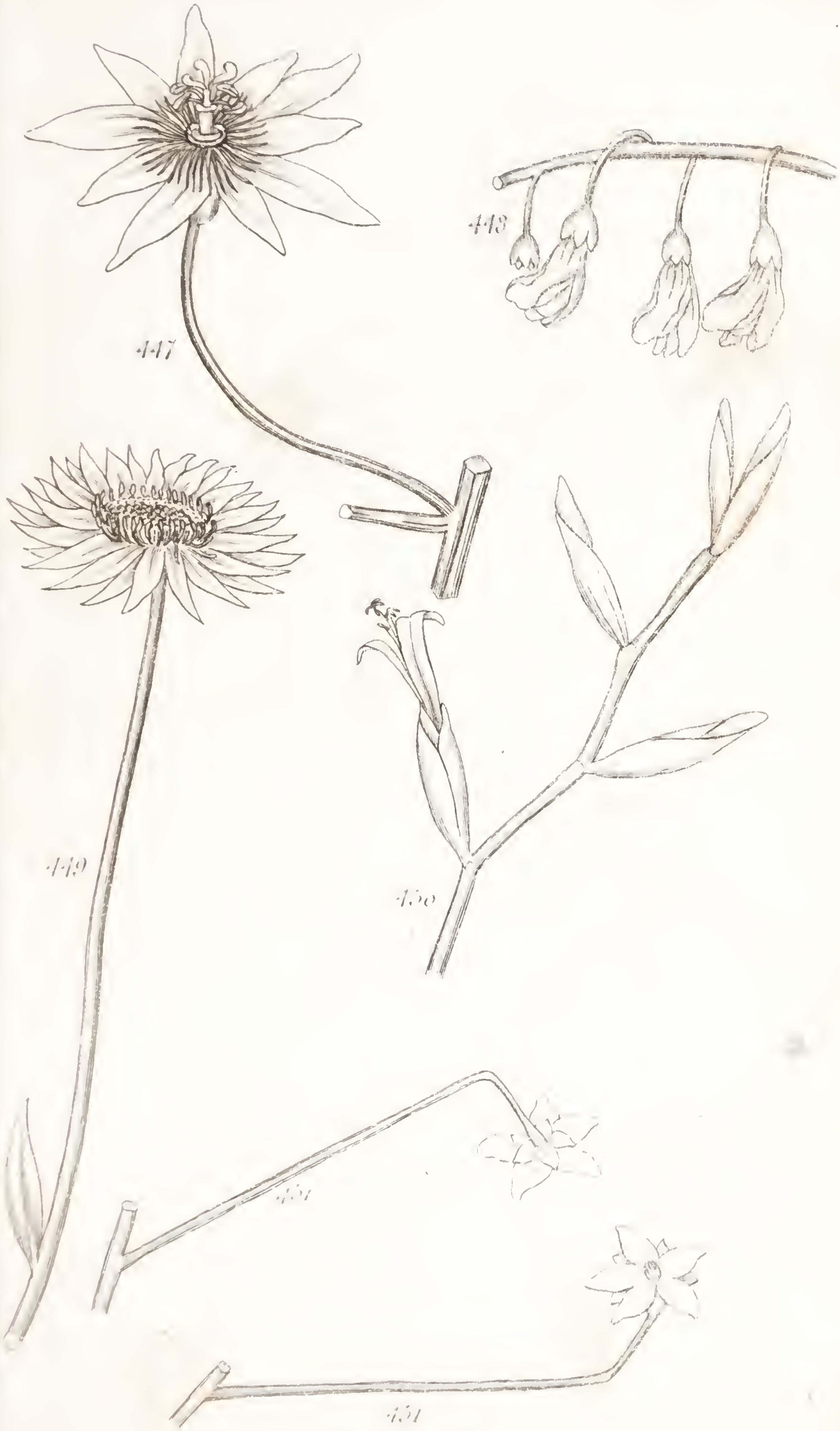

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Plate 62.

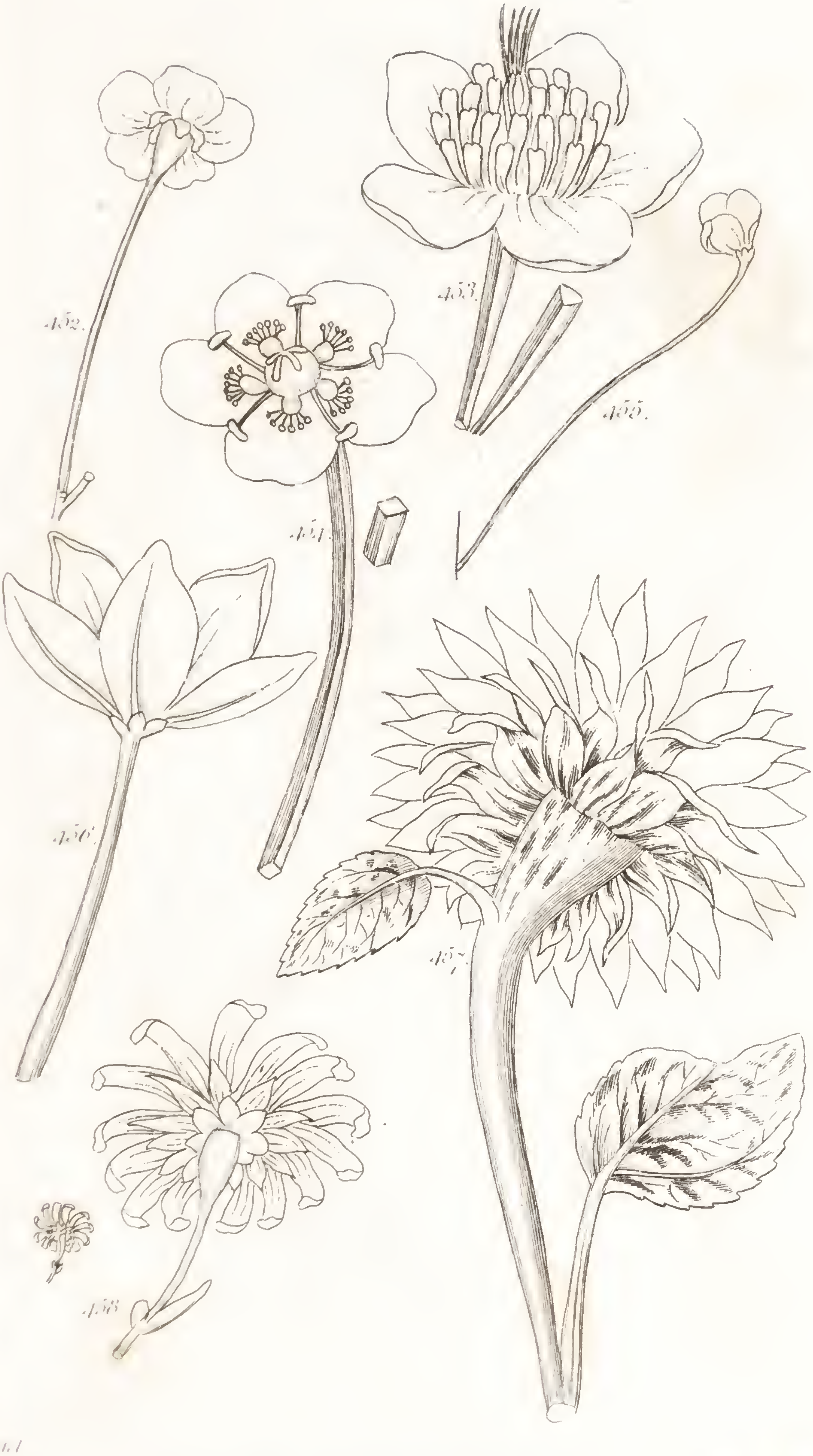

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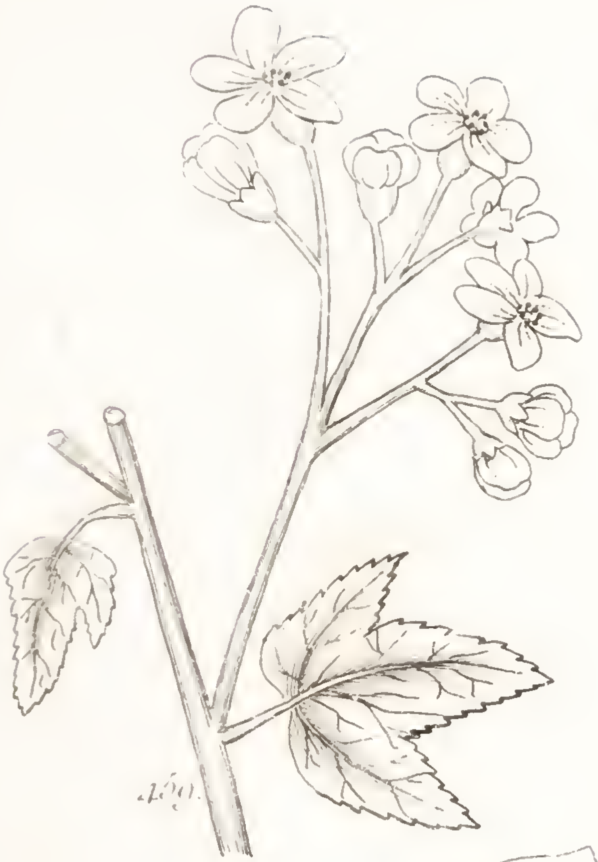
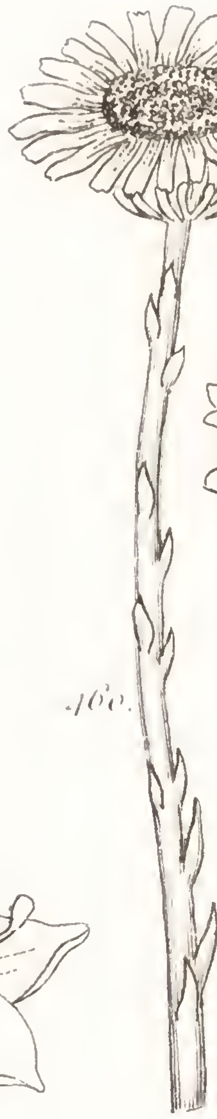
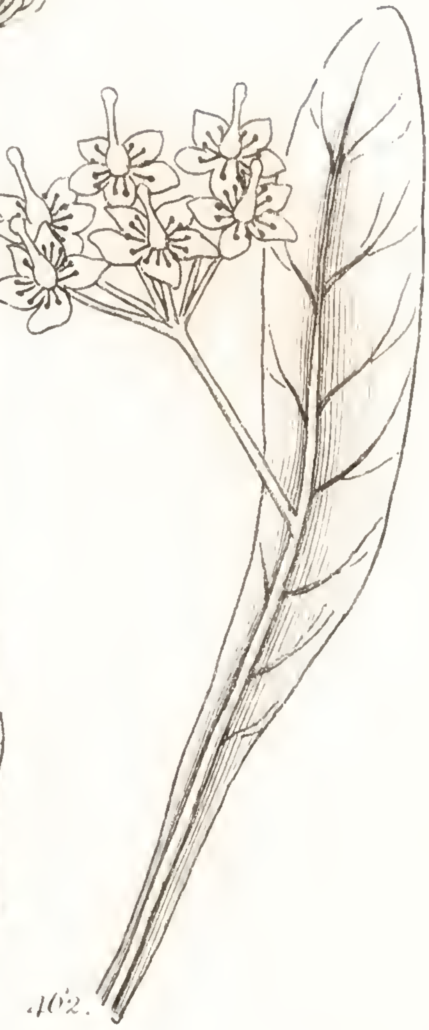
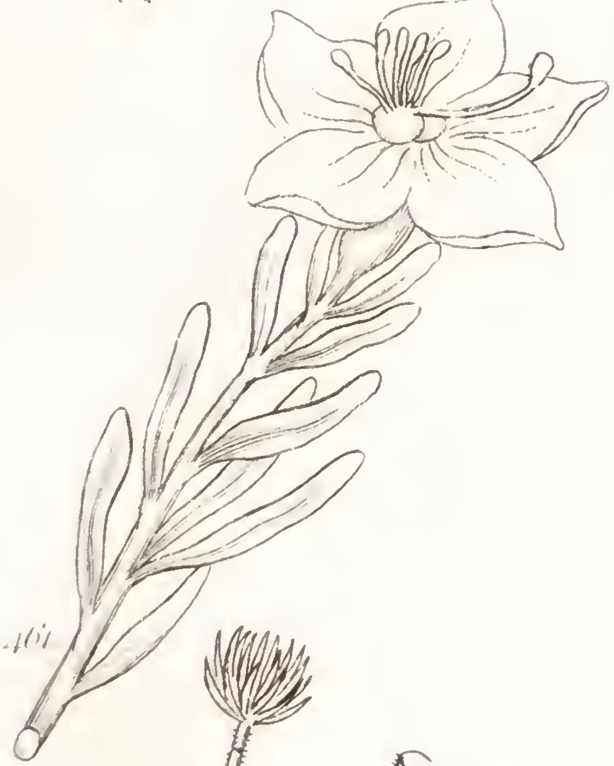
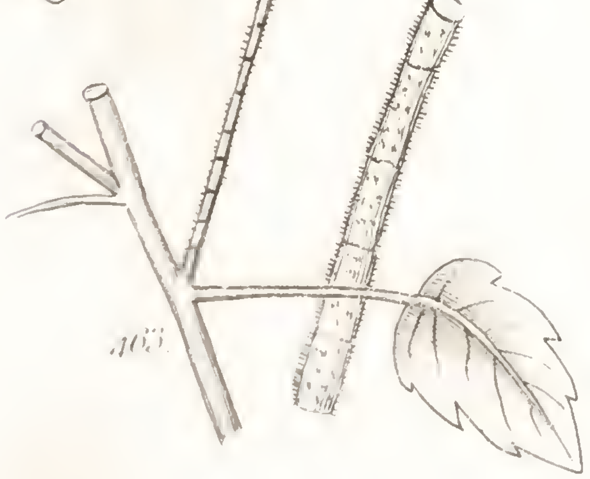
Plate 63.

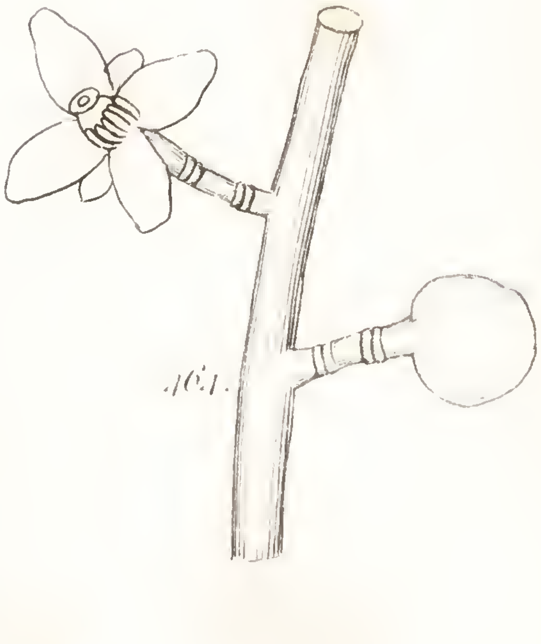












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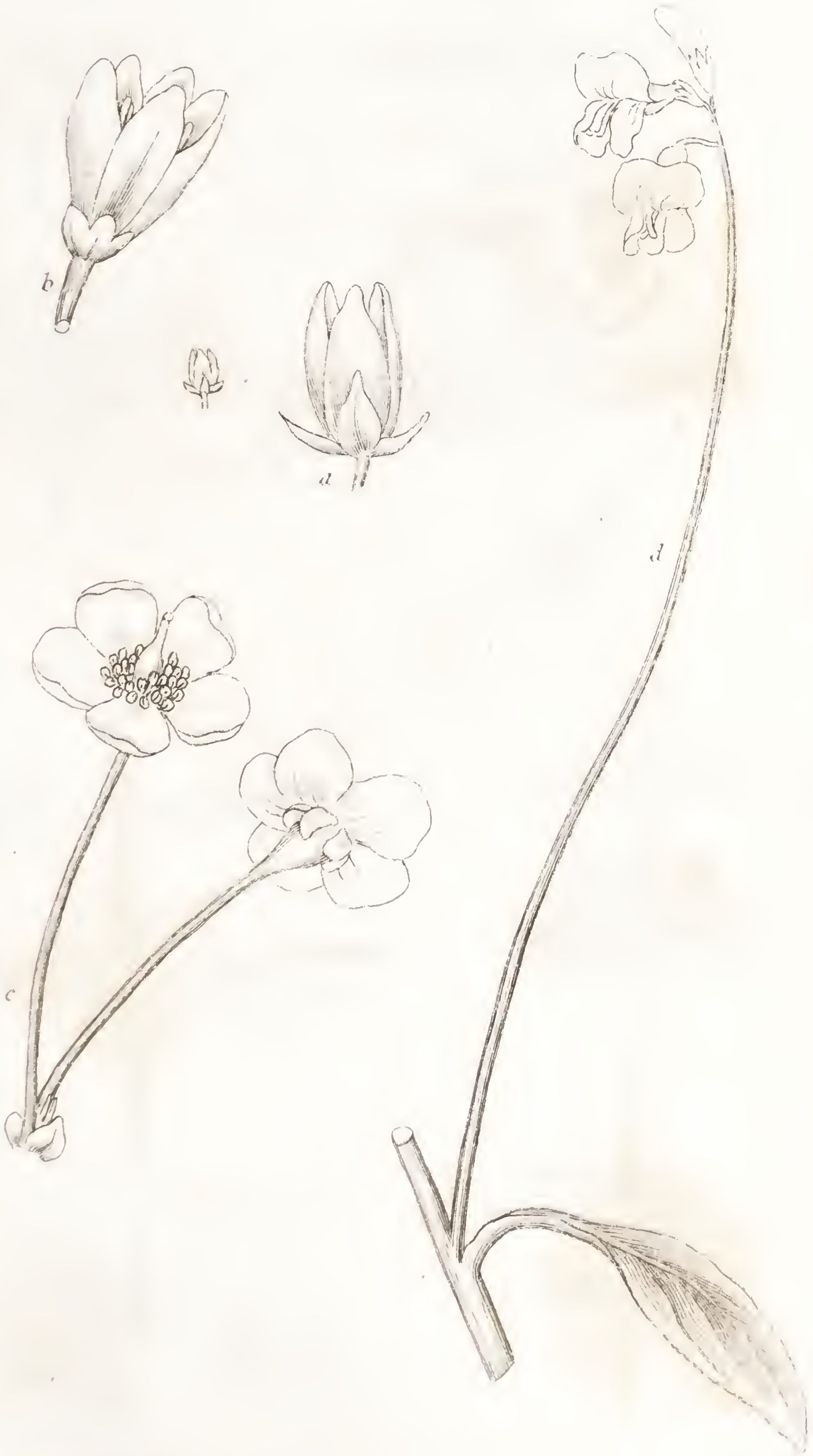

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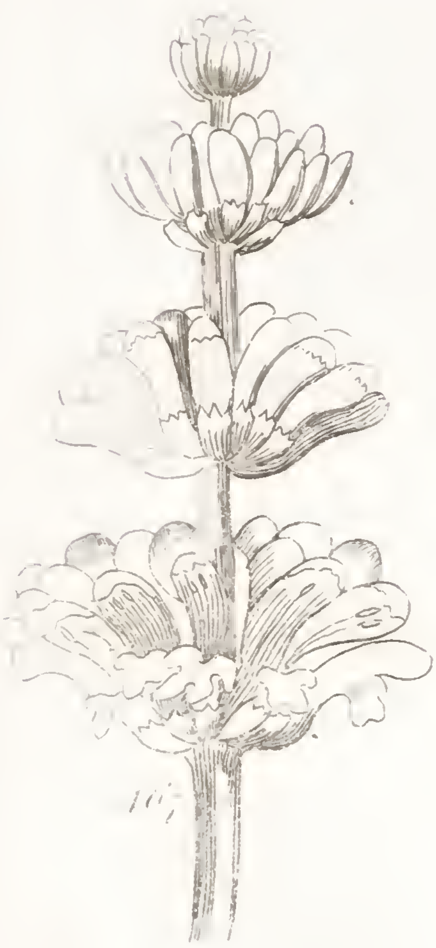
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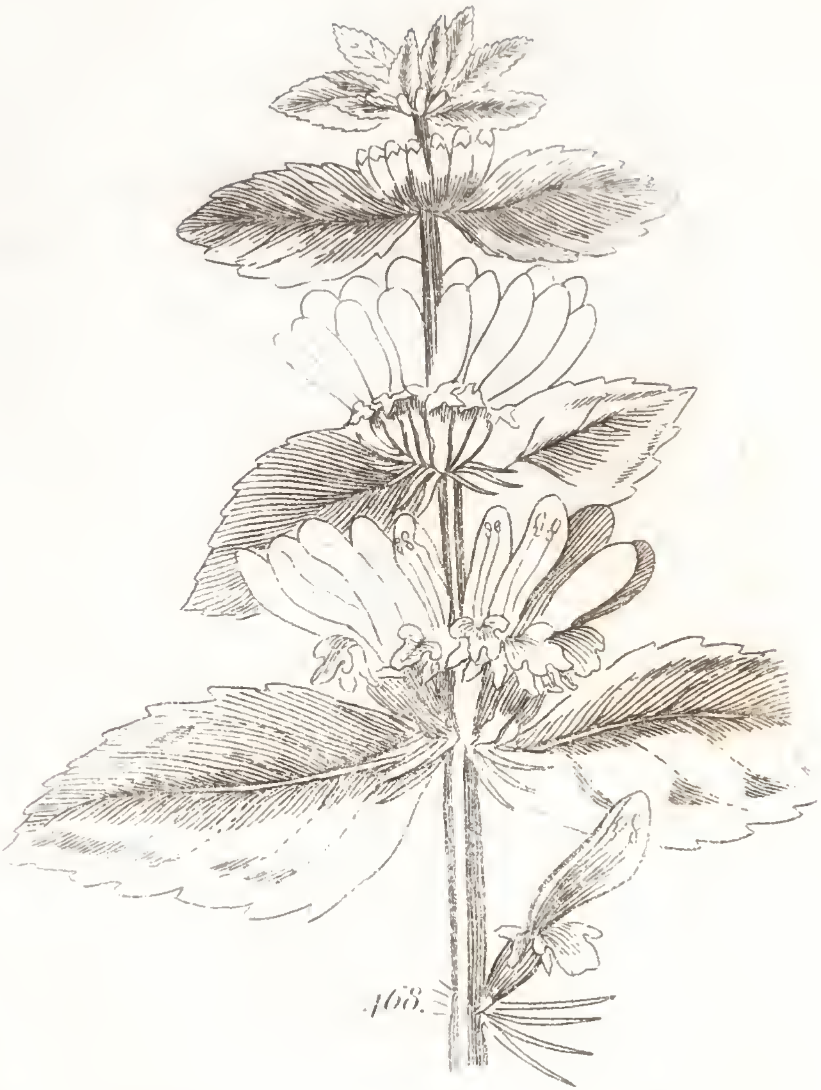
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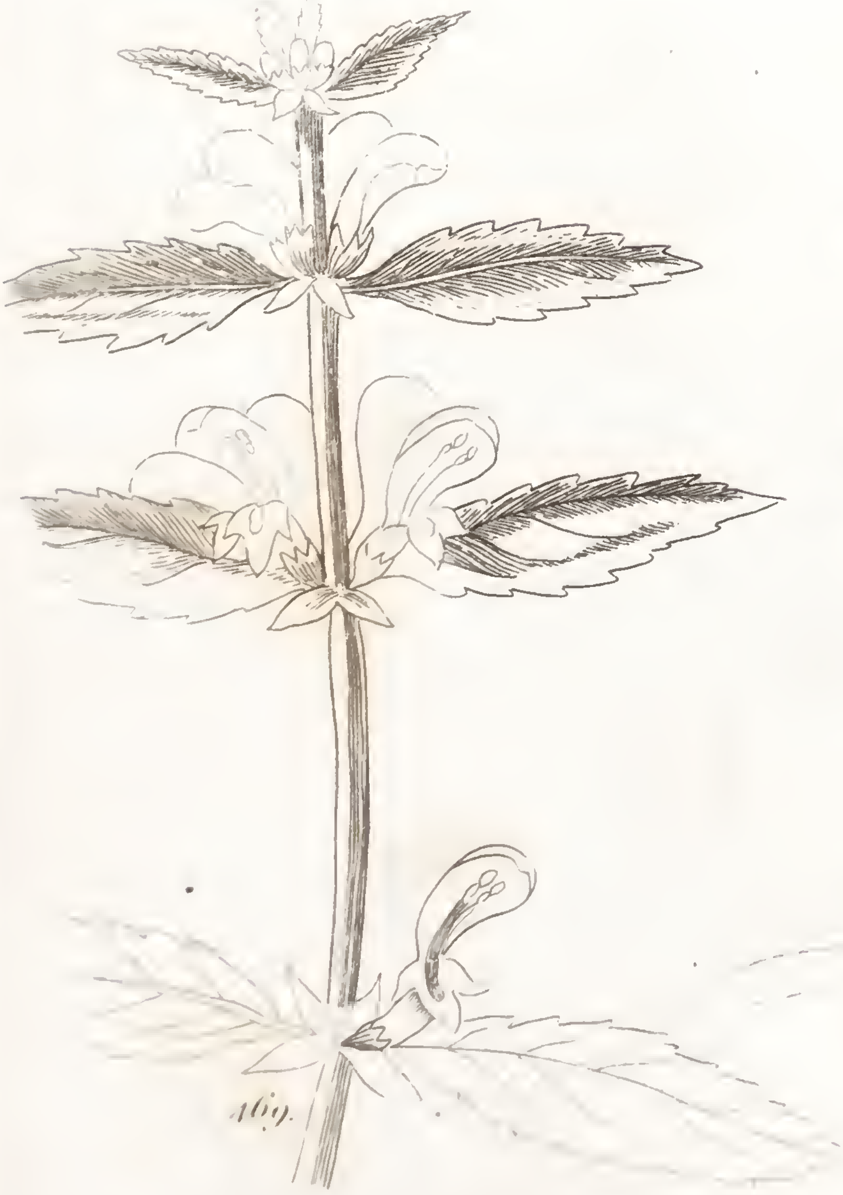
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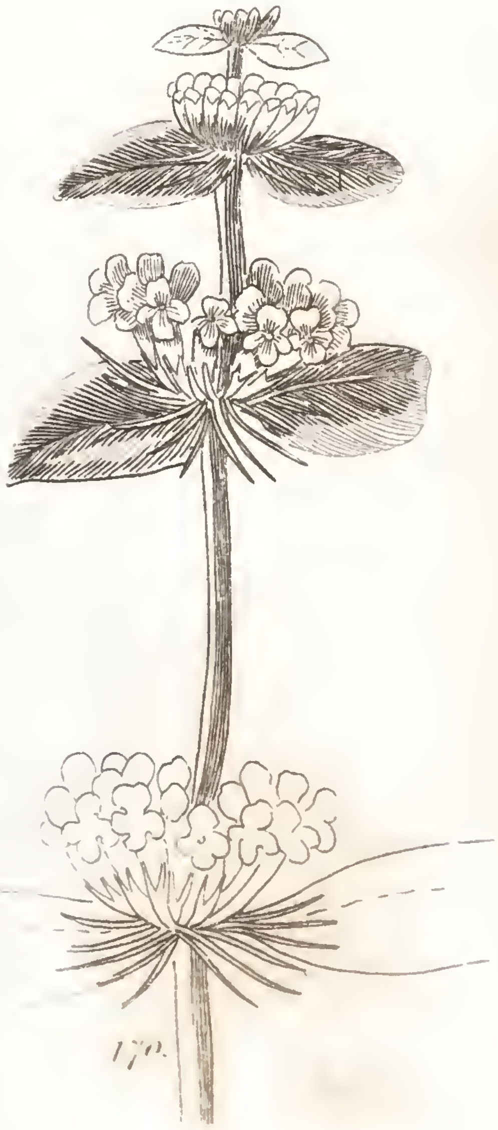
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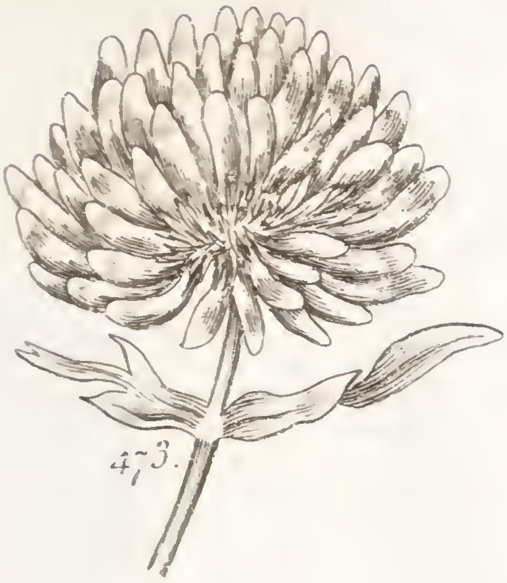
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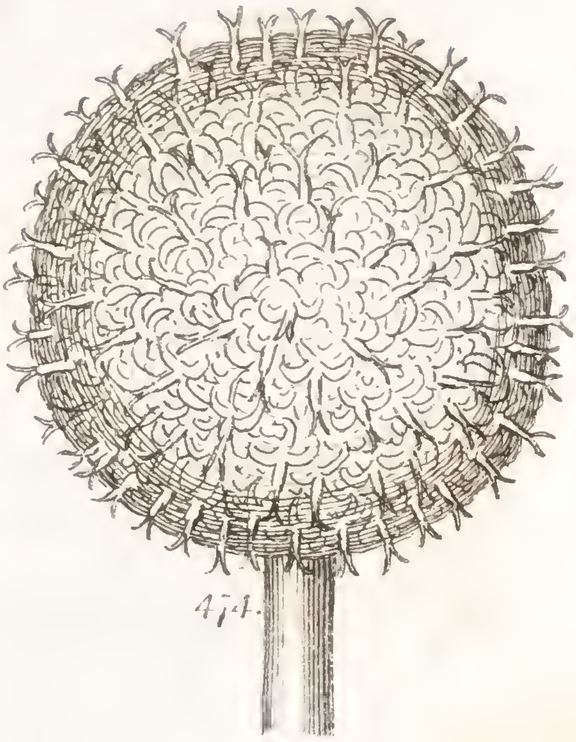
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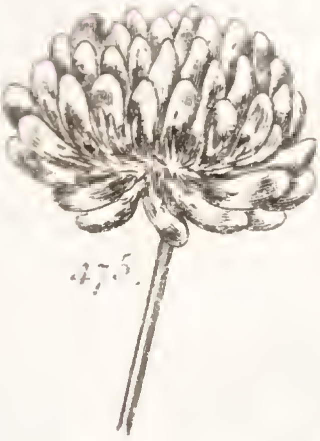
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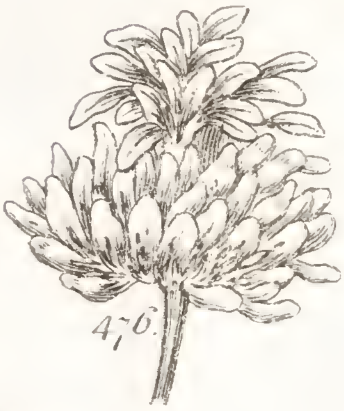
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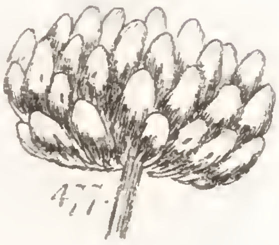
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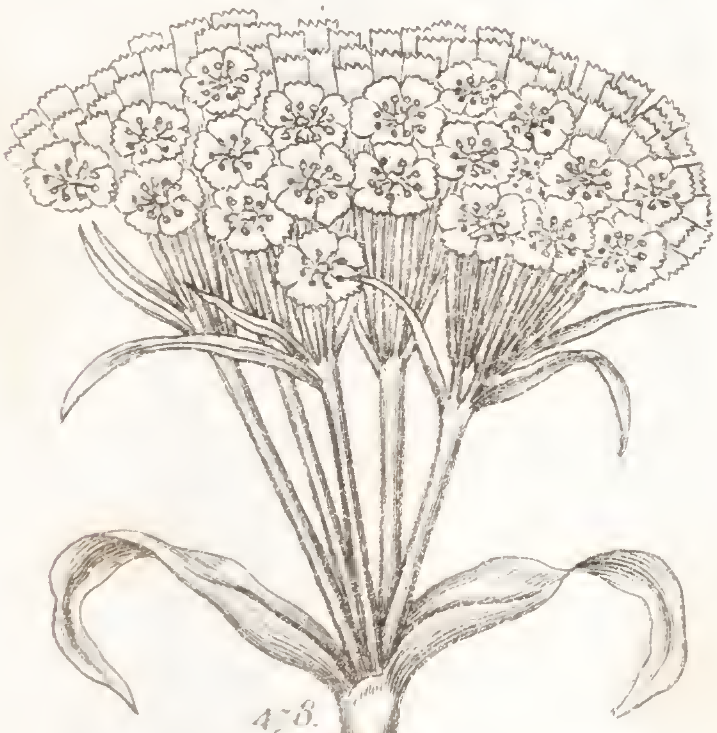
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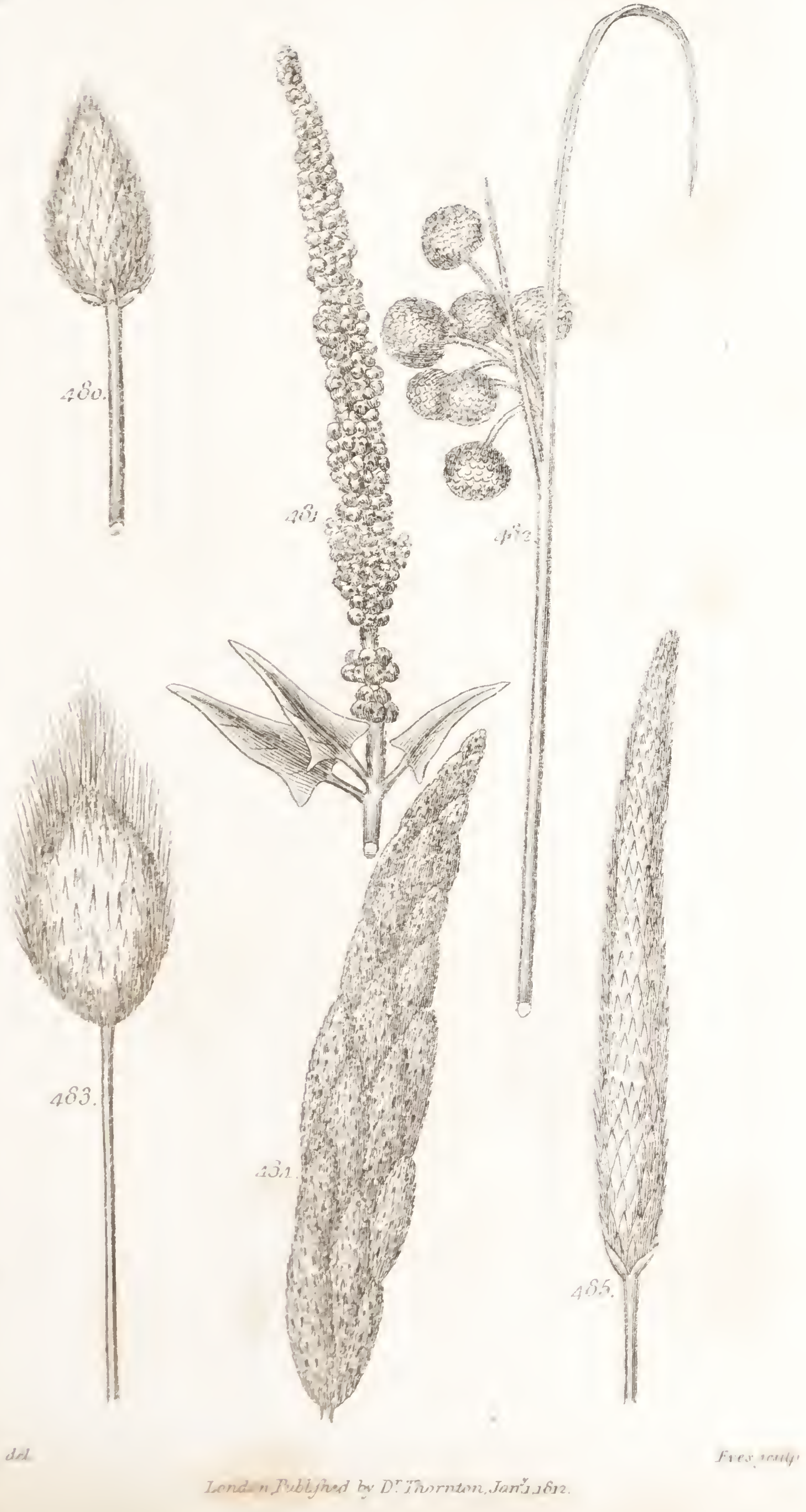

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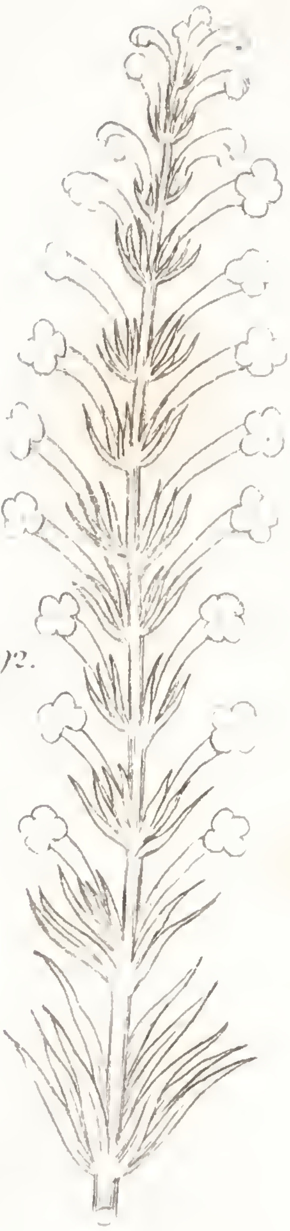
Plate 70.



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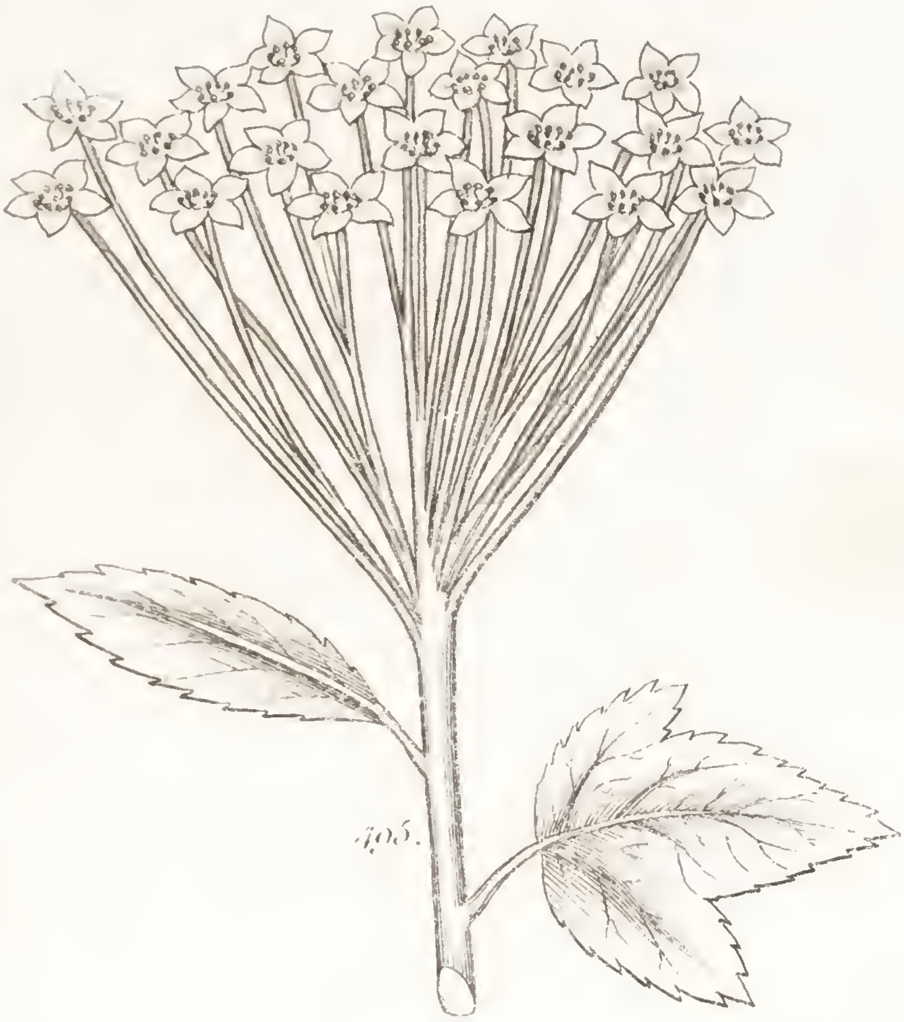

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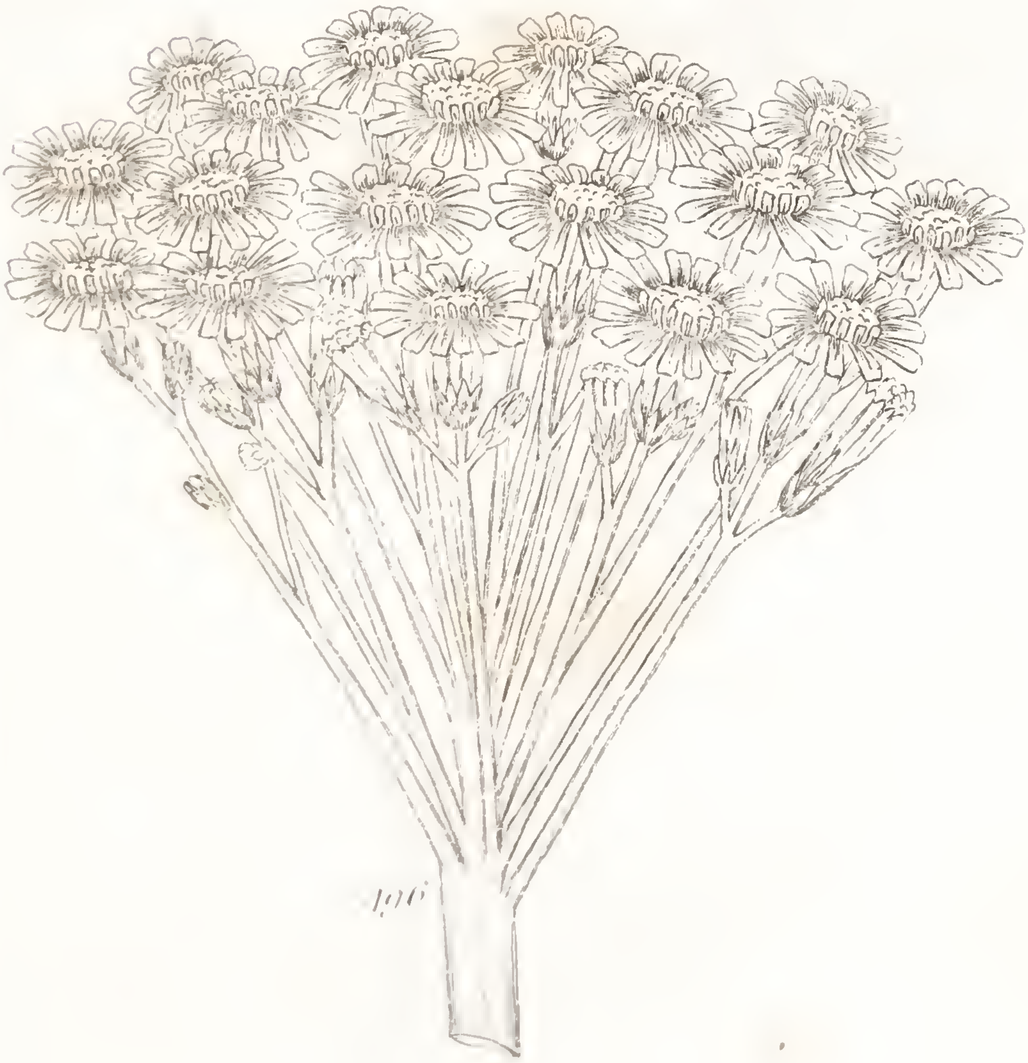

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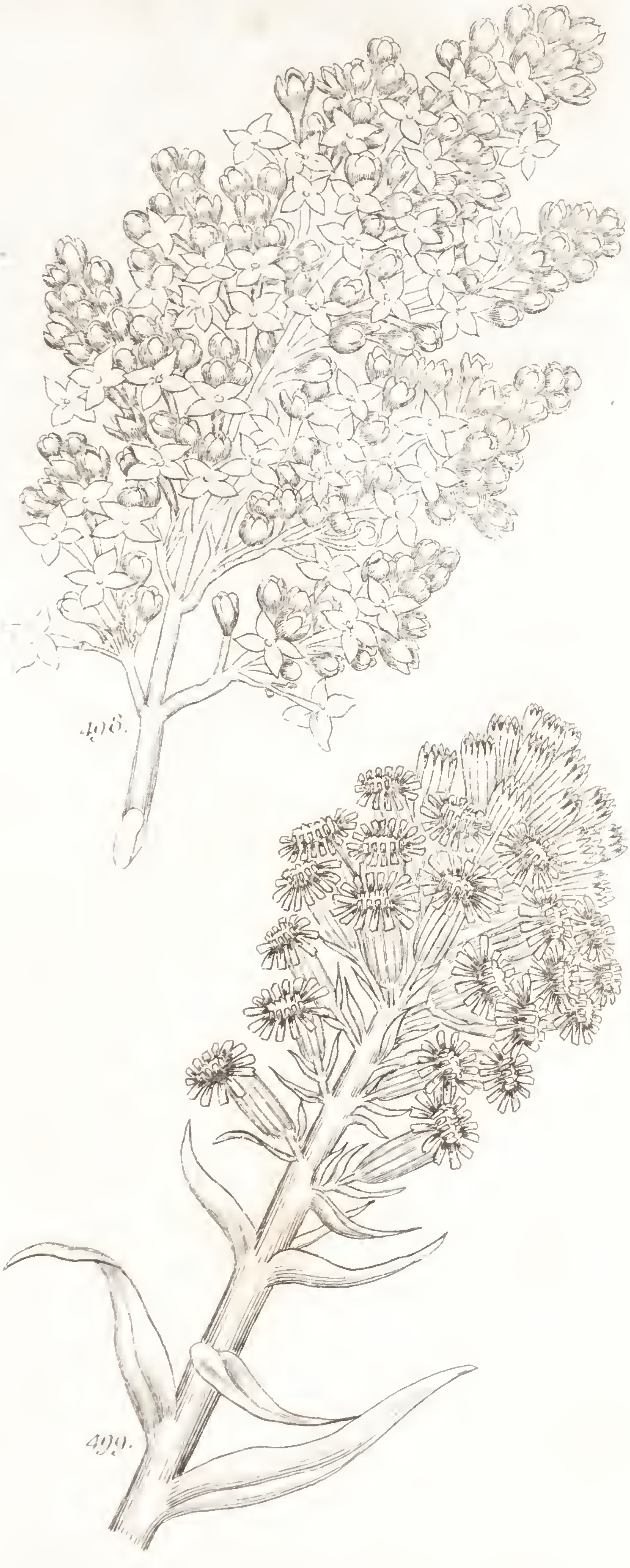

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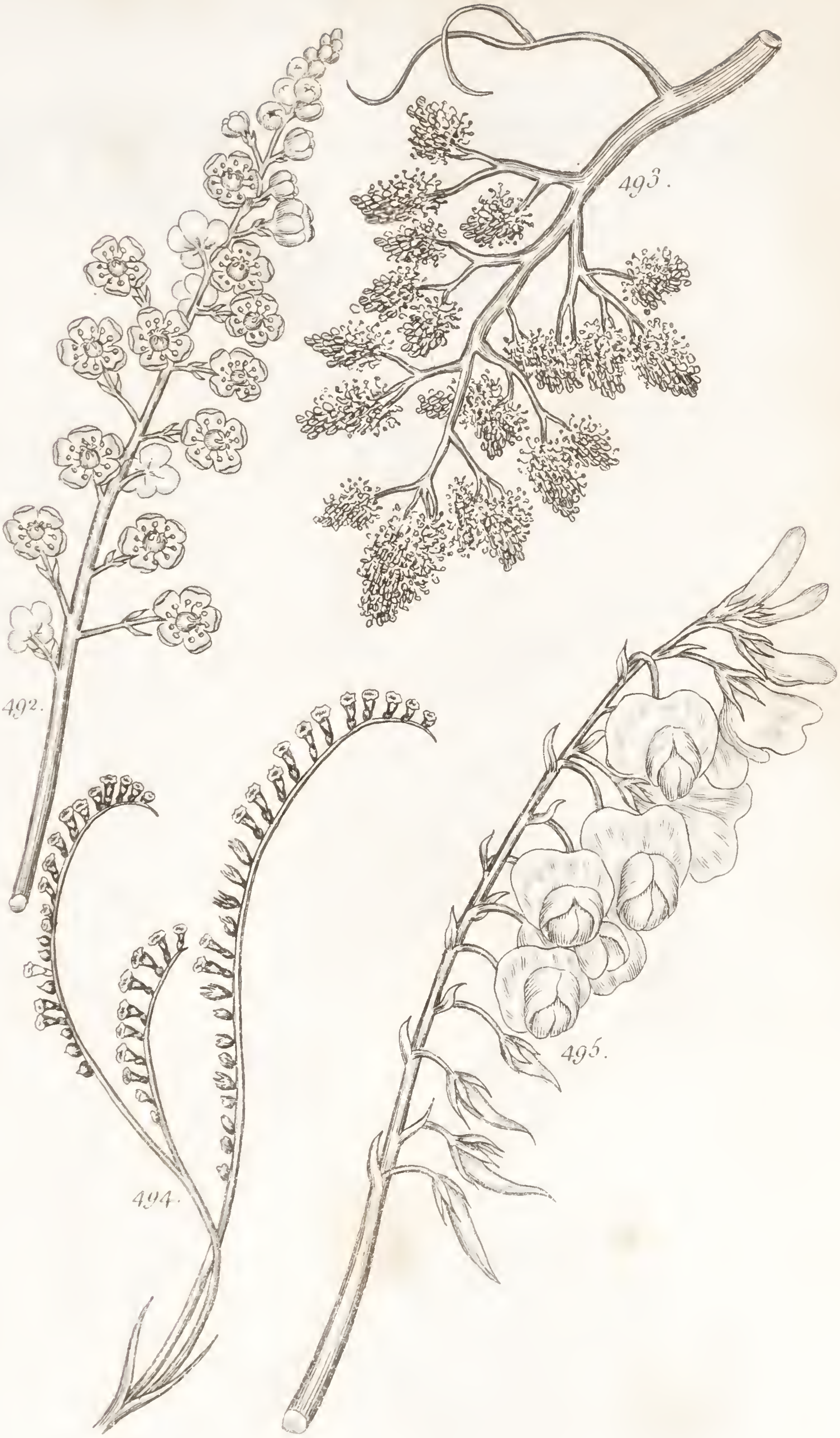

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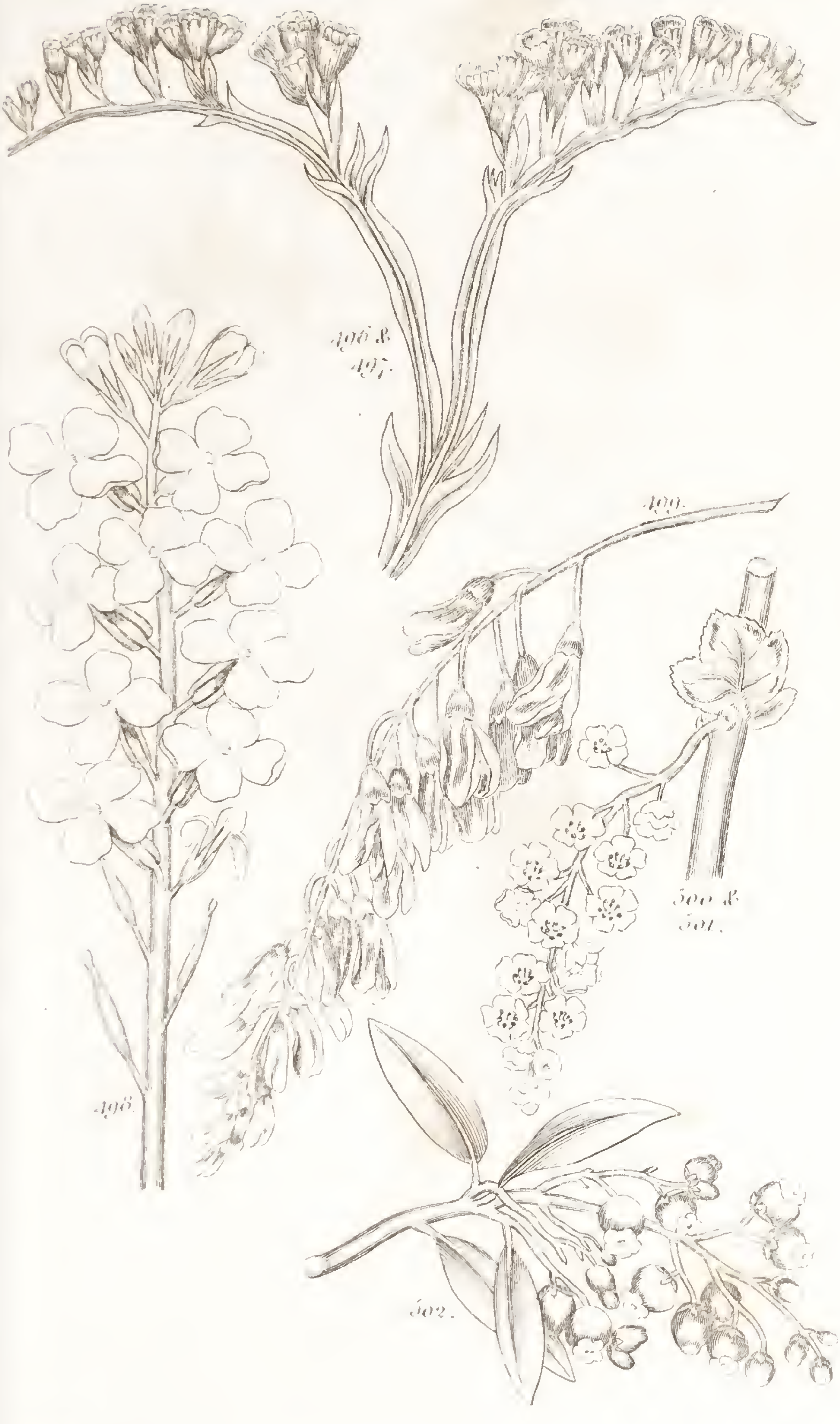

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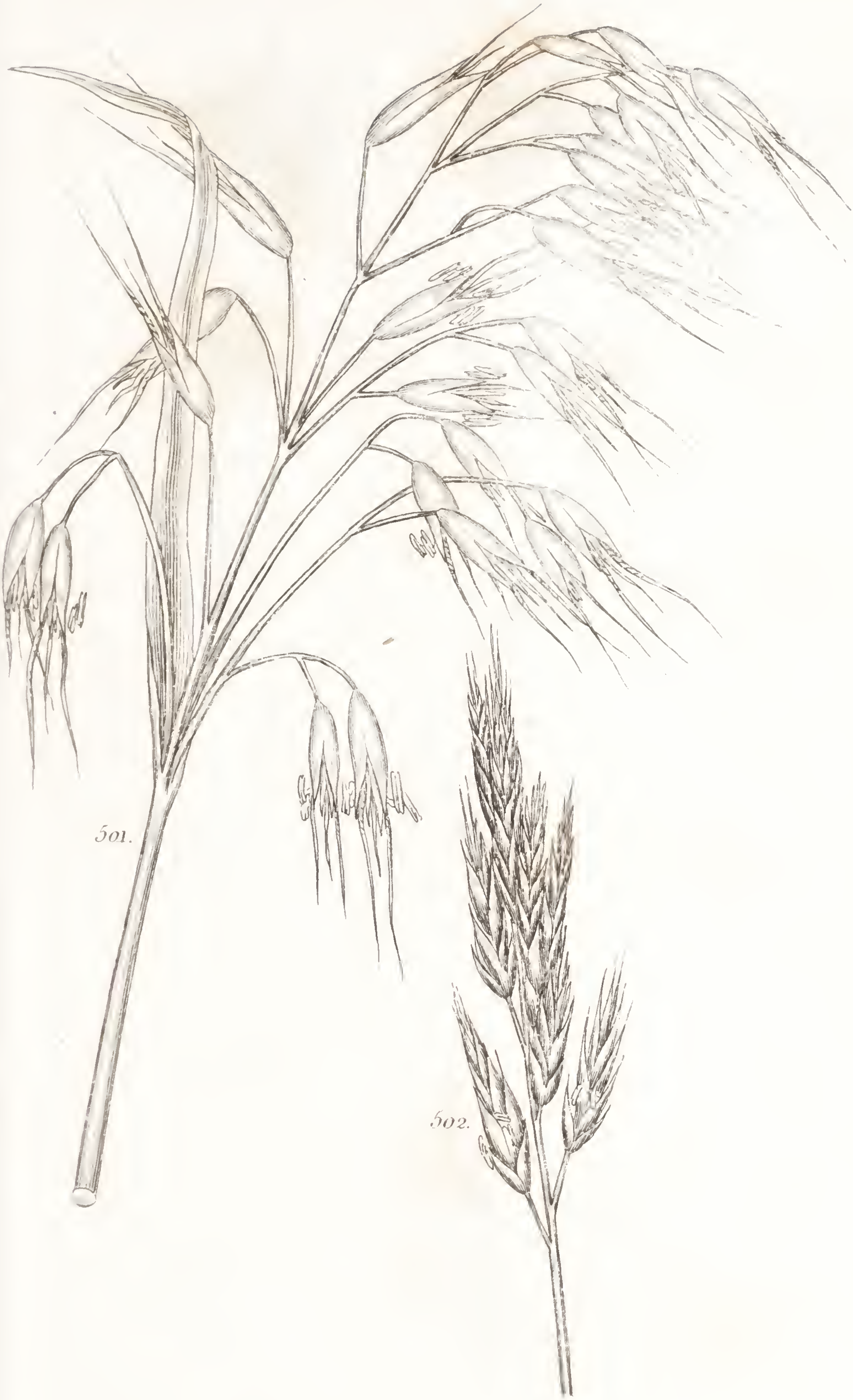

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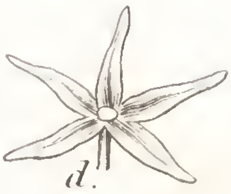
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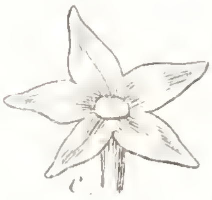
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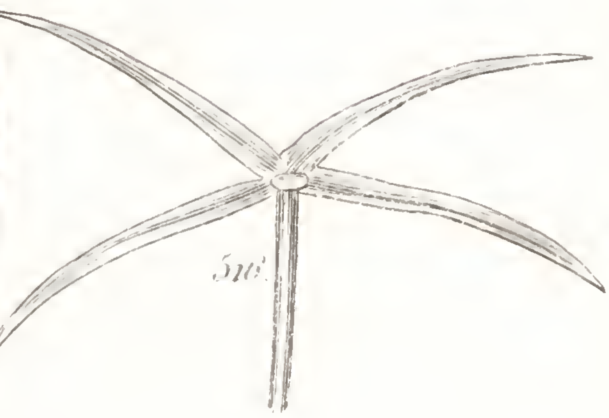
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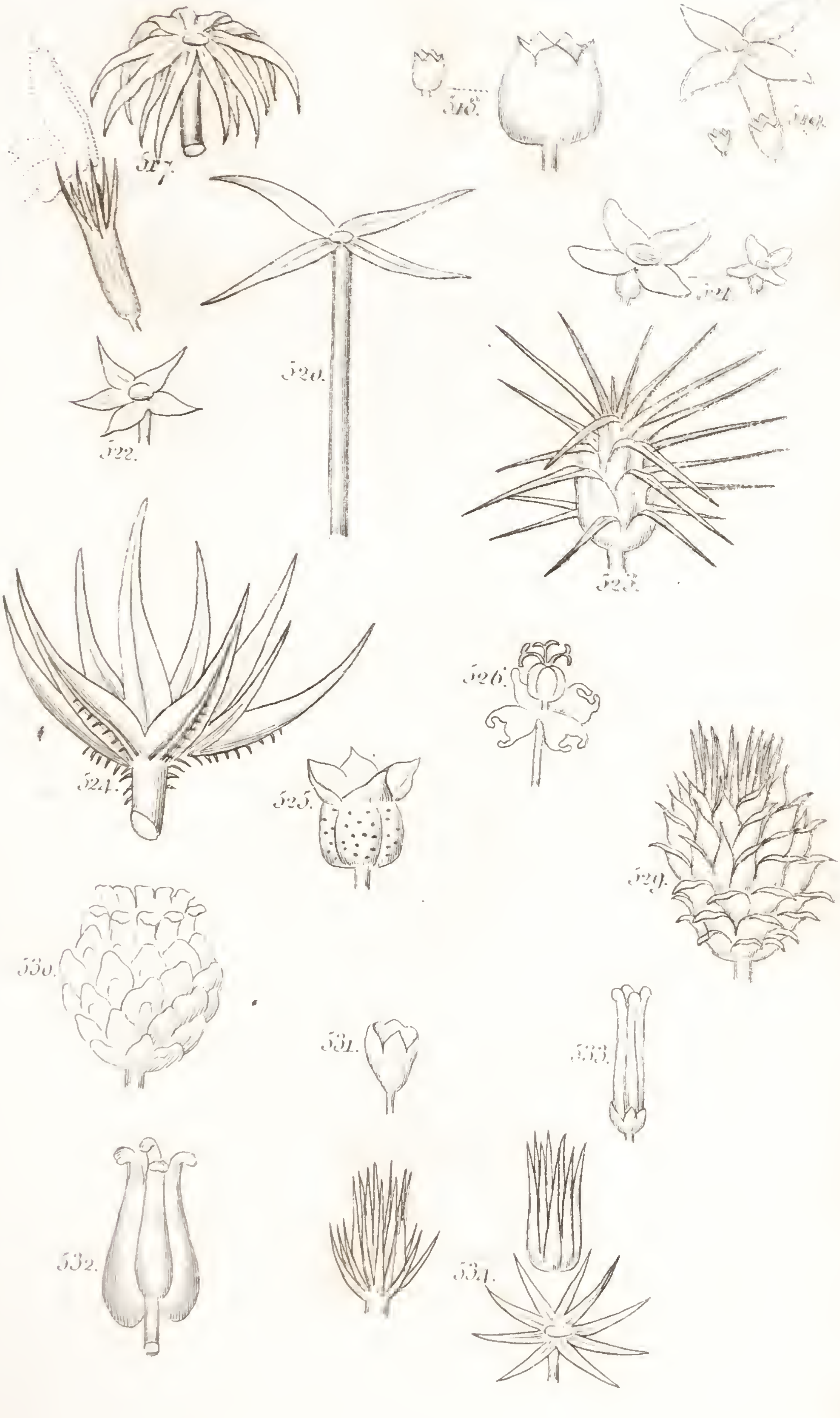

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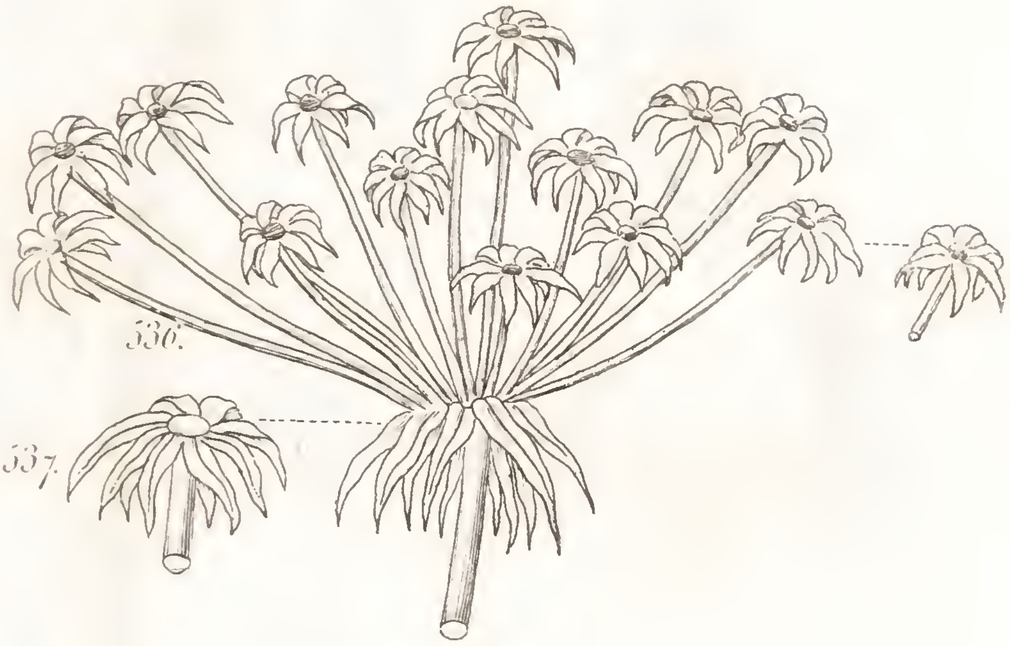

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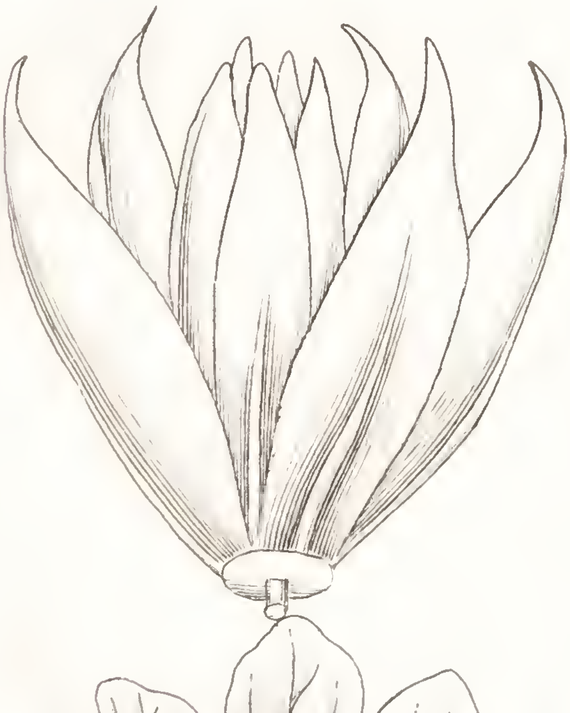

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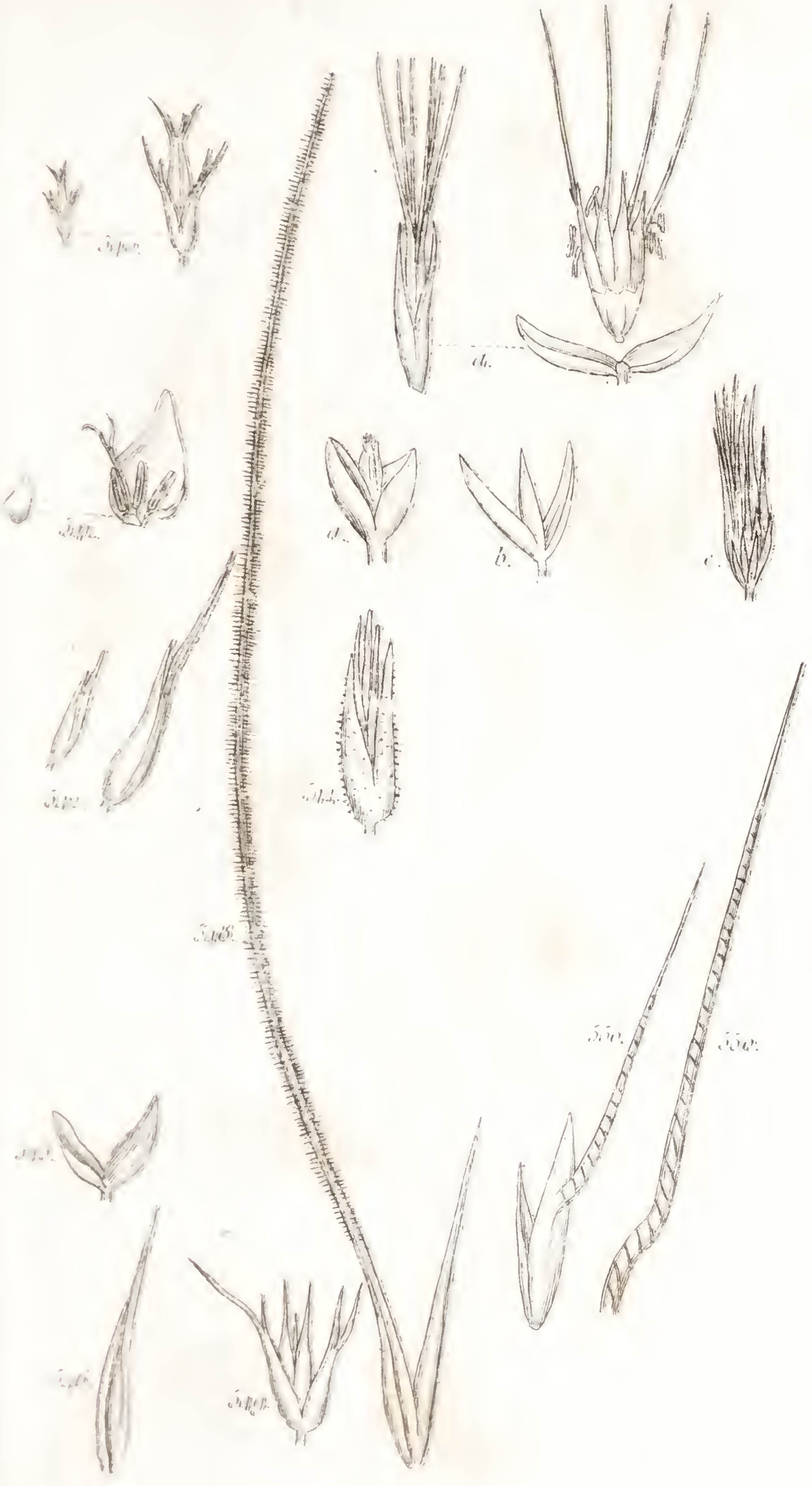

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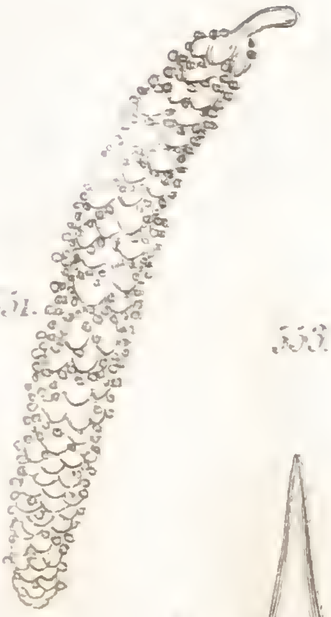
Plate 80.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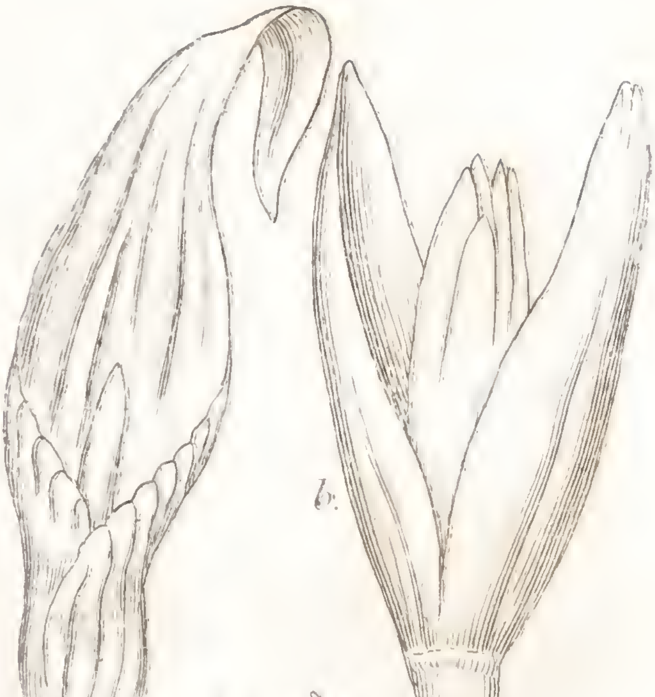
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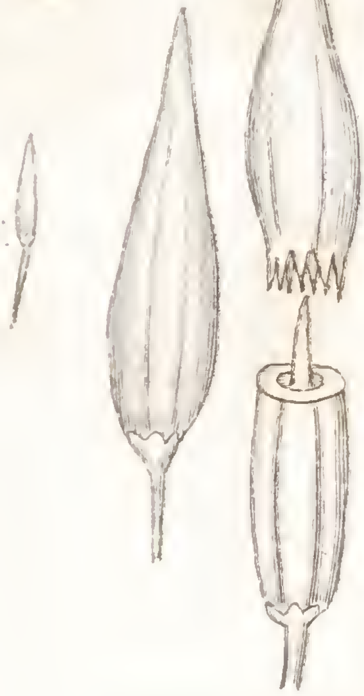
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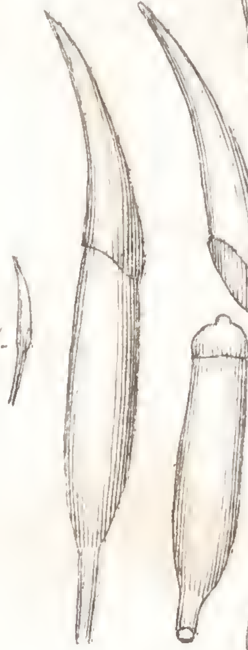
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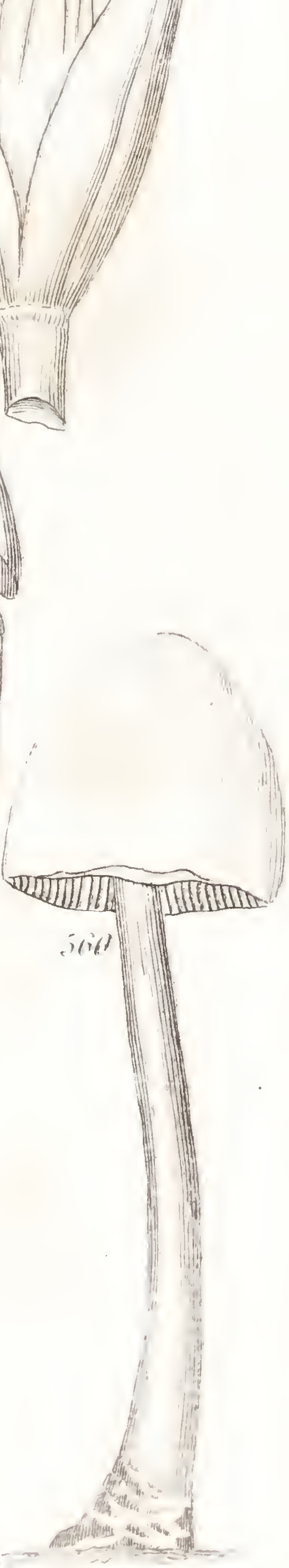
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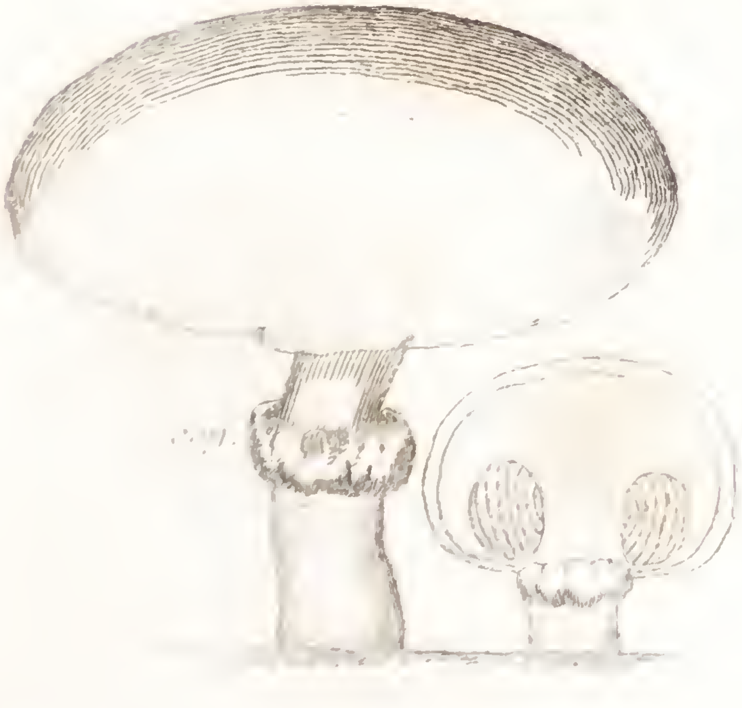
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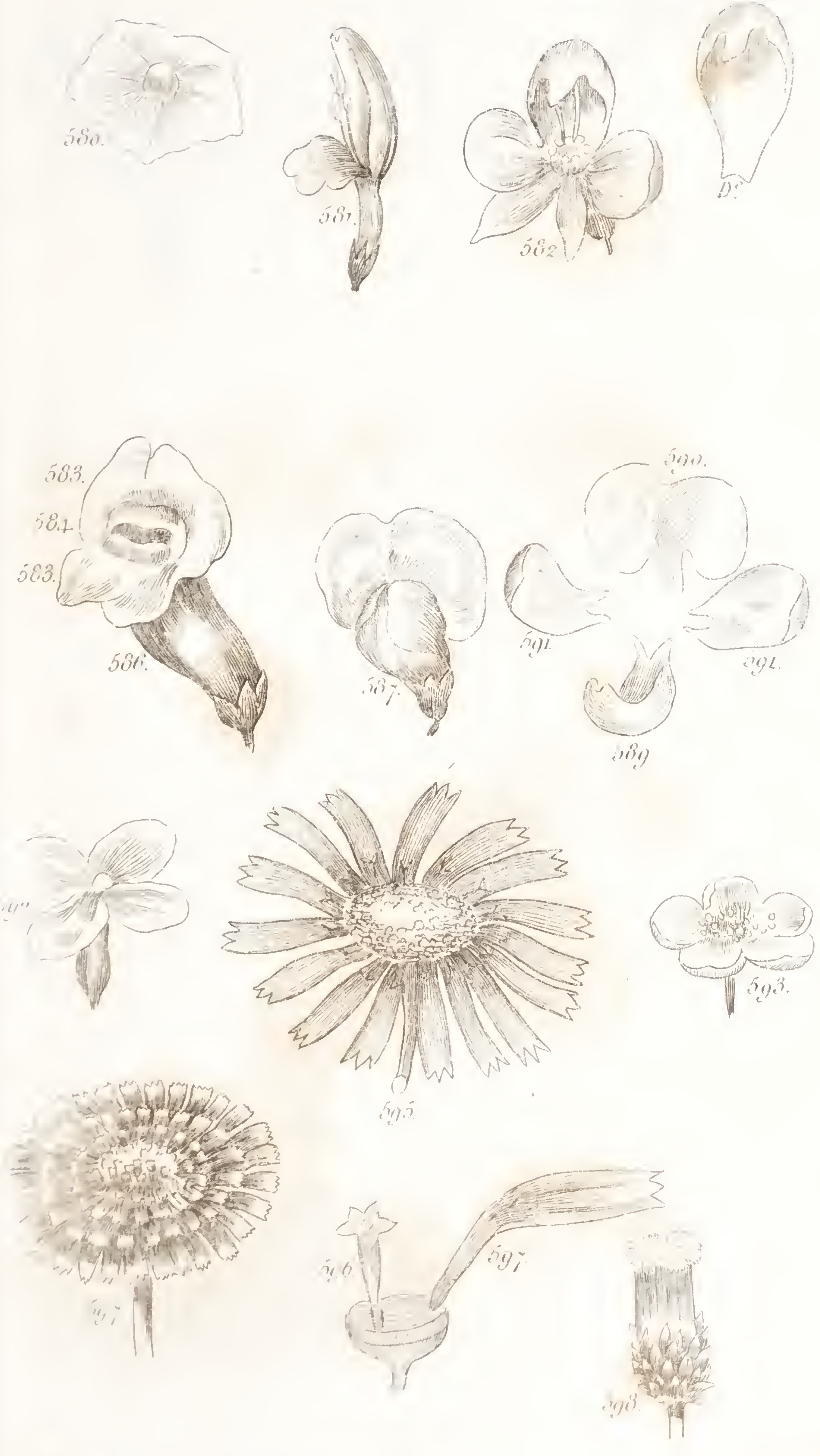
Plate 82



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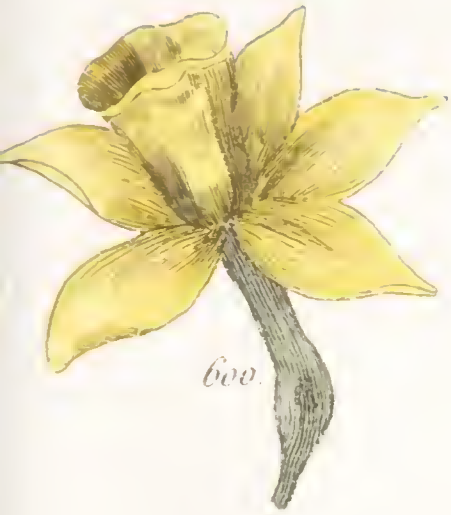
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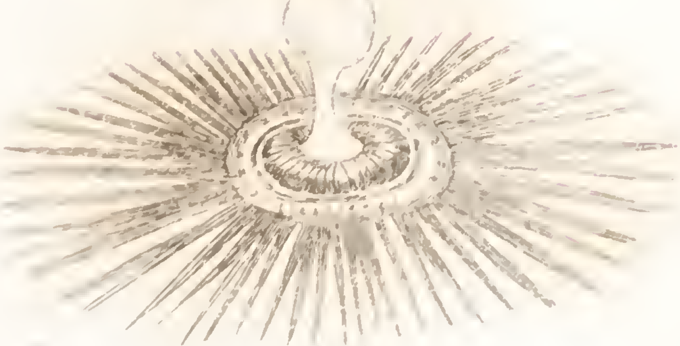
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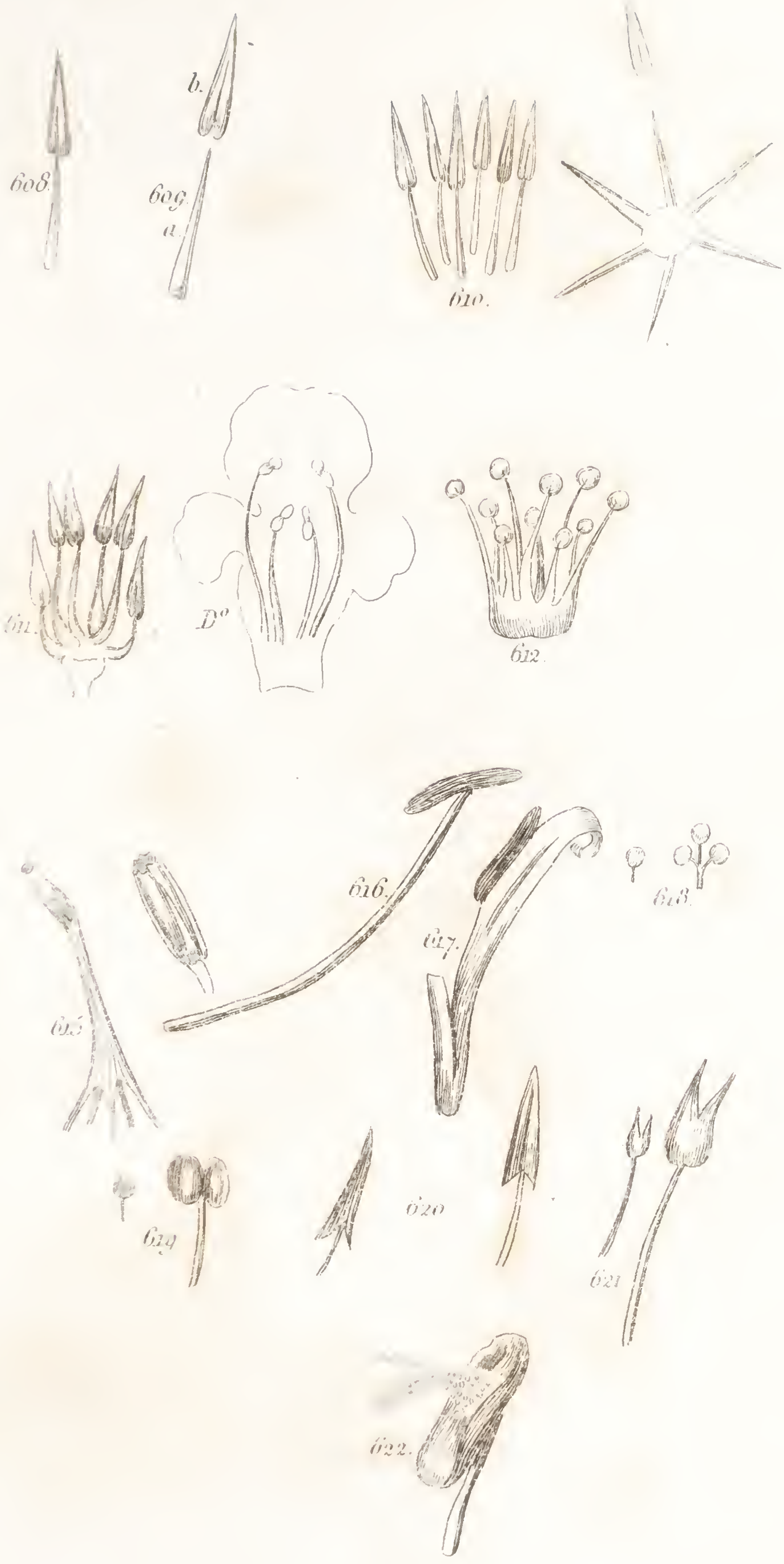
Plate 84.



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TERMS OF BOTANY.

PLANTS ARE OF THREE KINDS.

Kinds of Plants. Vide Plate 1.	1. HERBS, as the *Tulip* (TULIPA). 2. SHRUBS, as the *Lilac* (SYRINGA). 3. TREES, any Tree.

These possess,

I. A ROOT, an organ nourishing the plant.

These are of two sorts,

Sorts. Vide Pl. 2.	4. Common (communis) shooting into the ground; or, 5. Parasitical (parasitica) not fixing in the earth, as the VISCUM, *Missletoe.*

Roots take a three-fold division; being either,

Kinds. Vide Pl. 3.	6. Fibrous (fibrosa) composed of fibres; 7. Bulbous (bulbosa) fleshy, fibres at bottom; or, 8. Tuberous (tuberosa) fleshy, fibres on the side or top.

Varying in Duration.

1. *Duration.*	9. Annual (annua) perishing within the year. 10. Biennial (biennis) flowering the second year, and then perishing.

1. *Duration.* 11. Perennial (perennis) surviving many years.

Fibrous roots are,

2. *Figure.* Vide Pl. 4.

4

12. Fibrous (fibrosa) consisting entirely of filaments, as *Field Madder* (RUBIA PEREGRINA).
13. Articulate (articulata) intercepted with joints, as *Marsh Trefoil* (MENYANTHES TRIFOLIATA).
14. Repent (repens) creeping and then germinating, as *Wild Marjoram* (ORIGANUM VULGARE).
15. Horizontal (horizontalis) running in an horizontal direction, opposed to a fusiform, as *Common Vervain* (VERBENA OFFICINALIS).
16. Ramose (ramosa) having branches subdivided, as *trees.*
17. Fusiform (fusiformis) in the most simple manner tapering, as *Water Gipsywort.*
18. Premorse (præmorsa) as if cut off at the apex, as *Primrose* (PRIMULA).

Bulbous Roots are,

Vide Pl. 5.

5

19. Solid (solida) of one solid substance, as *Spring Crocus* (CROCUS VERNUS).
20. Scaly *(Squamosa)* having scales, as *White Lily* (LILIUM ALBUM).
21. Coated (tunicata) having coats or tunicks, as the *Onion.*

Grumous roots are,

Vide Pl. 6.

22. Round (globosa) nearly round, as *Turnip* (BRASSICA RAPA).
23. Oblong (oblonga) oblong, as *Wood Anemone* (ANEMONE NEMOROSA).
24. Dentate (dentata) having the appearance of teeth, as *Tooth-wort* (DENTARIA).
25. Tuberous (tuberosa) the fleshy parts connected to the base by threads, (opposed to 28) as *Pæony* (PŒONIA).
26. Palmate (palmata) fleshy and lobed, as the *Palmated Orchises.*
27. Twin (testiculata) two together, as in some of the *Orchises.*
28. Grumous (grumosa) or Fascicular, as in the *Ranunculus.*
29. Knotty (nodosa) having points, as *Cat's-tail.*
30. Granulated (granulata) sprinkled with fleshy particles as *Saxifrage* (SAXIFRAGA GRANULATA).

II. TRUNK *(Truncus)* is the organ which multiplies the plant.

1. *Kinds.*
Vide Pl. 7.

31. Stem (caulis) the trunk elevating the fructification and leaves, as *trees*, *shrubs*, and most *herbs.*
32. Culm (culmus) belonging to *grasses.*
33. Scape (scapus) elevating the fructification, and not the leaves, as the NARCISSUS.

Trunks. 34. Stipe (stipes) the trunk passing into the leaves, used also to express the pillar in the *mushroom.*

2. *Duration.* Vide Pl. 8. 35. Herbaceous (herbaceus) annual, not woody, as *Plantain* (PLANTAGO).

36. Somewhat shrubby (suffruticosus) permanent at the base, the branches yearly withering, as *Raspberry* (RUBUS IDÆUS).

37. Shrubby (fruticosus) perennial, with many stems, as *Red Currant* (RIBES RUBRA).

38. Arboreous (arboreus) perennial, with a simple stock, as trees (vide Fig. 17, Plate 7).

3. *Substance.* 39. Solid (solidus) full internally.

40. Pithy (inanis) spongy with an internal medulla, as ALCEA ROSEA.

41. Fistulous (fistulosus) tubular within.

4. *Direction.* Vide Pl. 9. 42. Erect (erectus) almost rising in the perpendicular direction, as *Jagged-leaved Teasel* (DIPSACUS LACINEATUS).

43. Straight (strictus) quite perpendicular, without any bending, *same example.*

44. Rigid (rigidus) impatient of flexion, *ditto.*

45. Lax (laxus) freely bending in form of a bow, as *Marsh Zannichella* (ZANNICHELLA PALUSTRIS).

46. Oblique (obliquus) departing from the perpendicular, or horizontal line, as *Common Golden Rod* (SOLIDAGO VIRGA AUREA).

Trunks. 47. Ascending (ascendens) rising upwards in the form of a bow, as *Officicinal Salvia* (Salvia officinalis).

48. Declined (declinatus) descending in the bow form, as Andrachne Telephoides.

49. Incurved (incurvatus) nodding inwards, as *Many-flowered Solomon's Seal* (Convallaria multiflora).

50. Nodding (nutans) reflexed outward at the apex, as *Nodding Sage* (Salvia nutans.)

Vide Pl. 10. *(Direction.)* 51. Diffuse (diffusus) with spreading branches, as *Yellow Fumitory* (Fumaria lutea).

52. Procumbent (procumbens) weak, resting on the ground, as *Common Cucumber* (Cucumis saliva).

53. Stoloniferous (stoloniferus) throwing suckers from the root, as the Strawberry (Fragraria vesca).

54. Sarmentous (sarmentosus) rooting with filiform joints, as the *Common Grape* (Vitis vinifera).

55. Repent (repens) resting on the ground, and throwing out roots, as the *Strawberry*.

56. Rooting (radicans) fixing itself with strong lateral roots, as *Ash-leaved Trumpet-flower* (Bignonia radicans).

Trunks.
Vide Pl. 11.
(Direction.)

57. Geniculate (geniculatus) intercepted with knots, as *Common Missletoe* (VISCUM ALBUM).
58. Zig-zag (flexuosus) from bud to bud, shooting here and there, as *Rough Bindweed* (SMILAX ASPERA).
59. Climbing (scandens) seeking an height, and supported in its progress.
60. Twisting (volubilis) spirally ascending by other bodies.
    - To the right (dextrorsum) from the right to the left, as the *Convolvulus.*
    - To the left (sinistrorsum) from the left to the right, as the *Hop* (HUMULUS LUPULUS).

4. *Figure.*
Vide Pl. 12.

61. Round (teres) destitute of angles, as *Dandelion* (LEONTODON TARAXACUM).
62. Semicircular (Semiteres) flat on this side, on the other somewhat circular, as *Belladonna Lily* (LILIUM BELLADONNA).
63. Compressed (compressus) having the two lateral sides flat, as *Aloe-leaved Water Soldier* (STRATIOTES ALOIDES).
64. Two-edged (anceps) having the opposite angles somewhat acute, as *Perforated St. John's-wort* (HYPERICUM PERFORATUM).
65. Angular (angularis) longitudinally excavated with more than two hol-

Trunks. low angles, as *Hollow-stalked Monarda* (MONARDA FISTULOSA).

Acute-angled (acutangulus) &c. from the figure of the angles.

Vide Pl. 13. *(Figure.)* 66. Three-sided (trigonus) having three longitudinal prominent angles, as *Sharp-pointed Club-rush* (SCIRPUS MUCRONATUS).

67. Triquetrous (triqueter) having three sides exactly flat.

Five-angled, six-angled, eight angled, many-angled, as MONARDA FISTULARIS, CACTUS PENTAGONUS, CACTUS HEXANGULARIS, CACTUS HEPTANGULARIS, CACTUS REPTANS, CACTUS MELOCACTUS.

5. *Cloathing.* Vide Pl. 14. 68. Naked (nudus) opposed to No. 55, as CASSYTHA BACCIFERA.

69. Leafless (aphyllus) destitute of leaves.

70. Leafy (foliatus) having foliage, as biennial *Tree Primrose* (ÆNOTHERA BIENNIS).

71. Vaginate, or sheathed (vaginatus) surrounded with the sheaths of leaves, as *Officinal Rhubarb* (RHEUM PALMATUM.)

72. Scaly (squamosus) sprinkled with scales, as POLYPODIUM ACULEATUM.

73. Imbricated (imbricatus) so covered with scales, as to leave no nakedness, as *Common House-leek* (SEMPERVIVUM TECTORUM).

Trunks. 6. *Superficies.* Vide Pl. 15.

74. Corked (suberosus) clothed with a soft exterior cortex, and elastic, as the *Cork Tree* (QUERCUS SUBER).

75. Chinky (rimosus) the exterior cortex going naturally into fissures, as *Common Oak* (QUERCUS ROBUR).

76. Tunicated (tunicatus) cloathed with membranes, as *Common Birch Tree* (BETULA ALBA.)

77. Even (lævis) an equal superficies, as *Buck-wheat* (POLYGONUM FAGOPYRUM).

78. Striated(striatus) marked with the finest hollow lines (ARUM MACULATUM).

79. Furrowed (sulcatus) hollowed with deep lines, as the *Bulbous Ranunculus* (RANUNCULUS BULBOSUS).

80. Smooth (glaber) having a slippery superficies (Vide No. 213), as the *Flowering Rush* (BUTOMUS UMBELLATUS).

81. Rough (scaber) made rough with eminent points, somewhat stiff (Vide No. 239), as the *Jagged-leaved Rudbeckia* (RUDBECKIA LACINIATA).

82. Muricated (muricatus) sprinkled with subulate points, as CACTUS PARASITICUS.

Vide Pl. 16. (*Superficies.*

83. Tomentose (tomentosus) cloathed with interlacing hairs (villi) not discernible (Vide No. 234), as the *Great Mullein* (VERBASCUM THAPSUS).

Trunks.

84. Villous (villosus) covered with soft hairs (pili) (Vide No. 233), as *Hairy Inula* (INULA HIRTA).

85. Hispid (hispidus) sprinkled with rigid bristles (setæ) (Vide No. 240), as *Jagged-leaved Teasel* (DIPSACUS LACINIATUS).

86. Prickly (aculeatus) armed with prickles (aculei) (Vide No. 241), as the *Dog Rose* (ROSA CANINA).

87. Thorny (spinosus) armed with thorns (spini) (Vide No. 382), as the *Sloe* (PRUNUS SPINOSA).

Vide Pl. 17. *(Superficies).*

88. Stinging (urens) defended with stings (stimuli) (Vide No. 389), as *Common Nettle* (URTICA DIOICA).

89. Stipuled (stipulatus) marked with stipules (Vide No. 289), as the *Everlasting Pea* (LATHYRUS LATIFOLIA).

90. Membranous (membranaceus) flattened in the manner of a leaf, *ditto.*

91. Bulbiferous (bulbiferus) bearing bulbs (Vide No. 648), as the *Bulb-bearing Lily.*

7. *Composition.* Vide Pl. 18.

92. Knotless (enodis) continued without joints, as the *Bullrush* (SCIRPUS LACUSTRIS).

93. Most simple (simplissimus) scarce any branches, as *Perennial Mercury* (MERCURIALIS PERENNIS).

94. Simple (simplex) extended in a continued series towards the apex, as

Trunks.

Greater Stich-wort (Stellaria holostea).

95. Intire (integer) most simple with branches scarcely narrowing, as *Common Birth-wort* (Aristolochia clematitis).

96. Jointed (articulatus) jointed, with joints between (geniculatus internodis), as *Yellow-spined Indian Fig* (Cactus tuna).

Vide Pl. 19. *(Composition.)*

97. Proliferous (prolifer) only emitting branches from the centre of the apex, as *Scotch Fir* (Pinus silvestris).

98. Dichotomous, or forked (dichotomus) always dividing into two, as *Missletoe* (Viscum album).

99. Brachiated (brachiatus) the branches opposite, crossing, as *Yellow-flowered Clusia* (Clusia flava).

100. Subramous (subramosus) with few lateral branches, as Saururus cernuus.

101. Branched (ramosus) many lateral branches, as Cheiranthus incanus.

102. Much branched (ramosissimus) with many branches heaped without order, as the *Apple* (Pyrus Malus).

Vide Pl. 20. *(Composition.)*

103. Twiggy, or rod-like (virgatus) the small branches weak and unequal, as *Strawberry Blite* (Blitum).

Trunks.

104. Paniculate (paniculatus) branches variously subdivided, as *Oat* (AVENA.)

105. Fastigiate (fastigiatus) branches of an unequal height, as ANDROSACE.

106. Spreading, patent (patens) forming an acute angle, as *Fennel* (*Anethum fœniculatum*) (Vide No. 131).

107. Diverging (divaricatus) making an obtuse angle (Vide No. 163), as *Coffee* (COFFEA).

III. BRANCHES, parts of the Trunk, or Stem.

1. *Disposition.* Vide. Pl. 21.

108. Alternate (alterni) springing like steps about the trunk (Vide No. 113), as *Great yellow Wolf's-bane,* (ACONITUM LYCOTONUM.)

109. Two-rowed (distichi) pointing two ways although every where inserted (Vide No. 114), as the *Polypody.*

110. Spread or scattered (sparsi) having no determinate disposition (Vide No. 116), as *Butcher's Broom* (RUSCUS ACULEATUS).

111. Crowded (conferti) numerous, nearly concealing the whole trunk (Vide No. 117) as *Common Cypress* (CUPRESSUS SEMPERVIRENS.)

112. Opposite (oppositi) placed in pairs cross-ways (Vide No. 124), as *Hollow-stalked Monarda* (MONARDA FISTULOSA).

Branches. Vide. Pl. 22. *(Disposition and Direction.)*

113. Verticillate (verticillati) several, surrounding the trunk at the joints, as *Water Plantain* (Alisma plantago).

2. *Direction.*

114. Erect (erecti) nearly perpendicular, as the *Poplar* (Populus).

115. Compact (coarctati) almost incumbent towards the summit, as the *Laurestine* (Viburnum tinus).

116. Divergent (divergentes) going off from the trunk at right angles, as the *Common Oak* (Quercus robur).

117. Divaricate (divaricati) going off with an obtuse angle, *ditto.*

Vide Pl. 23. *(Direction.)*

117. Deflexed (deflexi) bent back in the manner of a bow, as *Weeping Willow* (Salix babilonica.)

118. Reflexed (reflexi) depending perpendicularly, as *Yellow flowered Clusia* (Clusia flava).

119. Retroflexed (retroflexi) bent this way and that, as *Buck-thorn* (Rhamnus catharticus.)

120. Fulcrate (fulcrati) furnished with a fulcrum or prop (Vide No. 287), as the *Indian Fig-tree* (Ficus Benghalensis.)

IV. LEAVES, organs of motion of the plant.

1. *Place.* Vide Pl. 24.

121. Radical (radicale) sitting upon the root, as *Dandelion* (Leontodon taraxicum.)

Leaves. 122. Cauline (caulinum) inserted on the stem, as Parthenium.

123. Rameal (rameum) placed upon the branches, *ditto.*

124. Axillary (axillare) inserted at the base of the branch, *ditto.*

125. Floral (florale) nearest to the flower, as the *Radish* (Raphanus).

2. *Number*, as one (unicum) two (duo) three (tria) few (pauca) many (plurima).

3. *Situation.* 126. Alternate (alterna) placed like steps for climbing along the branch, as *African Kiggelaria*, (Kiggelaria Africana).

127. Two-rowed (disticha) pointing from two sides of the branch, although everywhere inserted, as *Deciduous Cypress* (Cupressus disticha).

128. Bifarious (bifaria) only springing from the two opposite sides of the branch, as *Norway Spruce* (Pinus abies).

129. Scattered (sparsa) placed without any certain order, as *Myrtle-leaved Milk-wort* (Polygala myrtifolia).

130. Crowded (conferta) many, nearly concealing the whole branch or stem, as *Common Yew* (Taxus baccifera).

131. Imbricated (imbricata) covering half of each other in turn, as *Common Cypress* (Cupressus sempervirens).

Leaves.

132. Fasciculate (fasciculata) many, proceeding from the same point at the joints of the branches, as *Common Larch* (PINUS LARIX).

133. Two together (Bina) PINUS LARIX, three together (terna), &c. as PINUS TÆDA, in fives, (quinta) as PINUS STROBULUS or (querna), according to the number of the joints of the branches, and so on.

Vide Pl. 25. *(Situation.)*

134. Confluent (confluentia) cohering with each other at the base, as *Austrian Lovage* (LIGUSTICUM AUSTRIACUM).

135. Approximate (approximata) coming very near each other, as *Common Yew* (TAXUS BACCIFERA).

136. Remote (remota) distant from each other, as BYTTNERIA MICROPHYLLA.

137. Opposite (opposita) placed in pairs cross-ways, as *Dog's-bane* (APOCYNUM).

138. Dicussated (decussata) so disposed opposite, that the branches, the tops being viewed, display four rows, as *Common Bastard Balm* (MELITTIS MELISSOPYLLUM).

139. Stellate (stellata) more than two leaves going around the stem; with 3 leaves, as *Narrow-leaved Kalmia* (KALMIA ANGUSTIFOLIA), 4 leaved, as *Campion* (CUCUBULUS STELLATUS), 6

Leaves. leaves, as *Madder* (RUBIA TINCTORUM)

4. *Direction.* Vide Pl. 26.

140. Erect (erectum) nearly rising perpendicularly, as *Late-flowered Chrysanthemum* (CHRYSANTHEMUM SEROTINUM).

141. Straight (strictum) altogether perpendicular, without bending.

142. Rigid (rigidum) impatient of flexion, as the *Yellow-flowered Side-saddle Flower* (SARRACENIA FLAVA).

143. Appressed (adpressum) by its disk approaching to the stem, as *Mithridate Mustard* (THLASPI CAMPESTRE).

144. Spreading (patens) sitting at right angles to the stem, as *Oleander Rose-bay* (NERIUM OLEANDER).

145. Horizontal (horizontale) going off from the stem at right angles, as *Strong-scented Lettuce* (LACTUCA VIROSA).

146. Assurgent (assurgens) archwise erect, first declining, and then erect at the apex.

147. Inflexed (inflexum) arched upwards towards the apex, as *Quill-leaved Fig-Marygold* (MESEMBRYANTHEMUM CALAMIFORME).

148. Reclined (reclinatum) bent back, so that the arch is lower than the base, with the apex ascending, as *Common*

Leaves.

Strawberry Blite (BLITUM VULGARE).

149. Recurved (recurvatum) bent back, so that the bow looks above, *ditto.*

150. Revolute (revolutum) recurved spirally, as *Sweet William* (DIANTHUS BARBATUS).

151. Depending (dependens) looking straight to the earth, as HEDYSARUM.

152. Oblique (obliquum) with the base looking to the heavens, with the apex, to the horizon, as *Persian Fritillary* (FRITILLARIA PERSICA).

153. Adverse (adversum) the upper surface looking towards the south, not the heaven, as *Narrow-leaved Ginger* (AMOMUM ZINGIBER).

154. Vertical (verticale) obverse, so that the region of the base comes out narrower than the region of the apex, *vertical ovate*, as *Common Water Pimpernel* (SAMOLUS VALERANDI); and *cordate*, as *Common Wood Sorrel* (OXALIS ACETOSELLA).

155. Resupinate (resupinatum) the upper surface becoming the inferior, or *vice versa*, as SPOT-FLOWERED ALSTRÆMERIA.

156. Submersed (submersum) hid under the surface of the water, as *Marsh*

Leaves. *Water Violet* (HOTTONIA PALUSTRIS).

157. Swimming (natans) lying upon the surface of the water, as *Broad-leaved Pond-weed* (POTAMOGETON NATANS).

158. Rooting (radicans) throwing out roots, as *Rooting-leaved Spleenwort* (ASPLENIUM RHIZOPHYLLUM).

5. *Insertion.* Vide Pl. 27.

159. Petiolate, or Petioled (petiolatum) with a petiole, inserted at the base, as *Peltated Stork's-bill* (PELARGONIUM PELTATUM).

160. Peltate (peltatum) the petiolus inserted into the disk of the leaf, *ditto.*

161 Sessile (sessile) sitting immediately on the stem, without a petiolus, as *Entire-leaved Parthenium* (PARTHENIUM INTEGRIFOLIUM).

162. Adnate (adnatum) joined by the upper surface to the base of the branch, as *Persian Fritillary* (FRITILLARIA PERSICA).

163. Coadunate (coadunatum) several connected with each other, as *Dark-purple Rhubarb* (RHEUM ATROPURPUREUM).

164. Decurrent (decurrens) the base of the leaf extended downwards along the stem, as *Decurrent Bell-flower* (CAMPANULA DECURRENS).

165. Embracing (complexicaule) going round the stem by the base, as

Leaves. *Jersey Everlasting* (Gnaphalium luteo-album).

166. Perfoliate (perfoliatum) surrounding the stem transversely with its base, nor gaping before, as *Perfoliate Eupatorium* (Eupatorium perfoliatum).

167. Connate (connata) pairs of opposite leaves conjoined on both sides of their base, as *Jagged-leaved Teasel* (Dipsacus laciniatus).

168. Sheathing (vaginans) the base forming a tube and cloathing the stem, as *Indian Reed* (Canna Indica).

6. *Figure.* Vide Pl. 28.

169. Round (orbiculare) quite round, as *Small Indian Cress* (Tropæolum minus).

Roundish (subrotundum) approaching the orbicular figure, as the *Sumach* (Rhus).

170. Ovate (ovatum) the longitudinal diameter exceeds the transverse; the base a segment of a circle, with the apex narrower, as *Hottentot Cherry* (Cassine maurocenia); sometimes the thick end is reversed, as *Common Water Pimpernel* (Samolus valerandi).

171. Oval (ovale) an oblong ovate, both ends being equally round, as *American Mammea* (Mammea Americana).

172. Oblong (oblongum) the longitudinal

Leaves. diameter many times overcoming the tranverse, as EUPHORBIA LATHEROIDES.

173. Parabolic (parabolicum) getting towards the apex gradually narrower, as *Shrubby Horehound* (MANUBIUM PSEUDO-DICTAMNUS).

174. Cuneiform, or wedge-shaped (cuneiforme) gradually towards the base narrowing, as CRASSULA PORTULACOIDES.

175. Spatulate (spatulatum) roundish (vide 169) with a narrow linear base, as *Canary House-leek* (SEMPERVIVUM CANARIENSE).

176. Rounded (rotundatum) destitute of angles, as *Melon* (CUCUMIS MELO).

177. Lanceolate (lanceolatum) oblong, lessening at both extremities, as *Hemp Dog's-bane* (APOCINUM CANNABINUM).

178. Elliptical (ellipticum) lanceolate, but with the breadth of an ovate leaf, as *Two-coloured Fig-Marygold* (MESEMBRYANTHEMUM BICOLOR).

179. Linear (lineare) equal every where in breadth, if pointed, subulate (subulare), as *Belladonna Lily* (LILIUM BELLADONNA).

180. Acerose (acerosum) linear, (vide 179) permanent, as *Scotch Fir* (PINUS SYLVESTRIS).

Leaves.
7. *Angles.*

181. Entire (integrum) undivided, destitute of any division.

182. Triangular (triangulare) from the number of angles, as *Great Shrubby Orach* (Atriplex halimus); three-sided, triquetrum, as *Flowering Rush* (Butomus umbellatus); four-angled, as *Field Horsetail* (Equisetum campestre).

183. Deltoid (deltoideum) rhomboid (vide 183) with four angles, of which the lateral ones are less distant from the base than the others, as *Great Shrubby Orach* (Atriplex halimus); five-angles (pentangulare), as *Peltated Geranium* (Pelargonium peltatum).

184. Rhomboid (rhombeum) of the form of a rhomb, as *Rhombus-leaved Sida* (Sida rhomboideum).

185. Trapeziform (trapeziforme) in the form of a trapezium, as *Maidenhair* (Adeanthum).

8. *Sinuses.*
Vide Pl. 29.

186. Cordate (cordatum) subovate, cut out in the base with a sinus, without posterior angles, as *Common Black Bryony* (Tamus communis); and *Cordato-Sagittate*, as *Buck-wheat* (Polygonum fagopyrum).

187. Reniform (reniforme) roundish, cut out with a sinus at the base without posterior acute angles, as *European Asarabacca* (Asarum Europæum).

188. Lunate (Lunatum) roundish cut out with a sinus at the base with posterior acute angles, as *Passion-flower* (PASSIFLORA LUNATA).

189. Sagittate (sagittatum) triangular, divided into posterior acute angles, as *Common Arrow-head* (SAGITTARIA SAGITTIFOLIA).

190. HASTATE (hastatum) sagittate (vide 187) divided into posterior angles, projecting laterally, as *Sweet-scented Cacalea* (CACALEA SUAVEOLENS).

191. Runcinate (runcinatum) pinnatifid (vide 199) so that, the lobes convex before, behind are transverse (concave) as *Common Dandelion* (LEONTODON TARAXACUM).

192. Panduriform (panduriforme) oblong, with the sides below narrowed, as *Dock* (RUMEX PULCHER).

193. Cleft, or bifid (sissum) divided into two parts by linear sinuses, with margins straight, as *Climbing Mountain Ebony* (BAUHINIA SCANDENS); also *three-cleft*, or trifid, and *many cleft*, as the BULBOUS RANUNCULUS.

194. Lobed (lobatum) divided to the middle, making distinct segments, as *Common Maple* (ACER CAMPESTRIS).

195. Two, five-cleft, &c. (bi-quinquefidum) according to the number of fissures—

Leaves. *three-lobed*, as Laurus Saxifraga; and *five-lobed*, as Humulus Lupulus.

Vide Pl. 30. 196. Partite (partitum) divided nearly to the base, faintly lobed, difform, 3, 4, 5, and much parted.

197. Palmate (palmatum) divided beyond the middle into nearly equal lobes, as *Blue Passion-flower* (Passiflora cœrulea).

198. Lyrate (lyratum) divided transversely into laciniæ, of which the inferior ones are less and more remote, as *Winter Cress* (Erysimum barbarea).

199. Pinnatifid (pinnatifidum) transversely divided into horizontal and oblong laciniæ; as *Star-thistle Centaury* (Centaurea calcitrapa).

200. Sinuated (sinuatum) having dilated sinuses on the sides, as *Common Oak* (Quercus robur).

201. Laciniated (laciniatum) cut into segments variously and indeterminately, as *Bee Larkspur* (Delphinium elatum).

202 Squarrose (squarrosum) divided into elevated segments, not parallel to the plane of the leaf, as Aloe Disticha.

9. *Margin.*
Vide Pl. 31. 203. Very intire (integerrimum) the margin linear, nor in the least cut, as

Leaves. — *Brompton Stock* (CHEIRANTHUS INCANUS).

204. Crenate (crenatum) the margin cut with incisions, without regard to the extremities, as *Shrubby Bramble* (RUBUS FRUTICOSUS); *obtusely,* as BETONICA; *acutely,* as SAXIFRAGE; *sawed-crenate,* as *entire leaved Parthenium.*

205. Serrated (serratum) all the incisions looking at the extremity, *acutely,* as *Perennial Mercury* (MERCURIALIS PERENNIS); *obtusely,* as *Black Stinking Horehound* (BALLOTA NIGRA); *inversely,* as DANDELION.

206. Ciliated (ciliatum) having parallel longitudinal setæ at the margin, as SEDUM ALBUM.

207. Dentate, or toothed (dentatum) with remote spreading points along the margin, as BLITUM VIRGATUM.

208. Thorny (spinosum) having subulate rigid points at the margin, as *Spiny Acanthus* (ACANTHUS SPINOSUS).

209. Cartilaginous (cartilagineum) having a subosseous margin, as *London Pride* (SAXIFRAGA UMBROSA.)

210. Repand (repandum) having a flexuose margin, yet flat.

211. Jagged (lacerum) the margin variously divided, with different shaped segments, as *Hawkweed-leaved Groundsel* (SENECIO HIERACIFOLIUS).

Leaves.

212. Eroded (erosum) sinuated (Vide 200), with very small obtuse sinuses, and unequal laciniæ, as *Woolly Sage* (Salvia Æthiops).

213. Dedalus (dædaleum) both flexuous and jagged.

10. *The Apex.* Vide Pl. 32.

214. Obtuse (obtusum) terminated within the segment of a circle, as *Obtuse-leaved Pepper* (Piper obtusifolium).

215. Emarginate (emarginatum) terminated by a notch, as *Silver Fir* (Pinus picea).

216. Retuse (retusum) terminated with an evident obtuse sinus at top, as *Broad-leaved Hermannia*, (Hermannia latifolia); all round, as *Common Penny-wort* (Hydrocotyle vulgaris); scarce perceptible, as *Yellow-flowered Clusia* (Clusia flava).

217. Præmorse (præmorsum) terminated obtusely with unequal incisions, as Chamærops mitis.

218. Truncated (truncatum) terminated by a transverse line, as *Common Tulip Tree* (Liriodendron tulipera).

219. Acute (acutum) terminated by an acute angle, as *Hemp Dog's-bane* (Apocynum canabinum).

220. Cuspidate (cuspidatum) terminated by a setaceous point, as *Indian Fig* (Ficus religiosus).

Leaves. 221. Mucronate (mucronatum) terminated by a prominent point, like an arrow, as *Rough Bind-weed* (SMILAX ASPERA); ending very *acute*, as *Tartarian Statice* (STATICE TARTARICA); *obtuse*, as *Canadian Asarabacca* (ASARUM CANIDENSE).

222. Cirrhose, or tendrilled (cirrhosum) ternated by a tendril, as *Superb Lily* (GLORIOSA SUPERBA).

11. *Surface.* Vide Pl. 33.

223. Upper surface (pagina superior) commonly points to the heaven, under surface (pagina inferior) to the earth.

224. Naked (nudum) destitute of hairs or bristles, as *Orange* (CITRUS AURANTIUM).

225. Smooth (glabrum) the surface slippery, *ditto.*

226. Shining (nitidum) a shining smoothness, as *Broad-leaved Orchis* (ORCHIS LATIFOLIA).

227. Lucid (lucidum) bright, as if illumined, as *Sweet-bay Laurel* (LAURUS NOBILIS).

228. Coloured (coloratum) any other colour than green, as *Three-coloured Amaranth* (AMARANTHUS TRICOLOR).

229. Nerved (nervosum) with most simple vessels running from the base to the apex, as ALISMA PALUSTRIS.

230. Three-nerved, (trinerve) having three

nerves meeting above the base of the leaf, as CLEANOTHUS AMERICANUS.

231. Triple-nerved (triplinerve) three nerves meeting this side the base of the leaf, as *Jerusalem Artichoke* (HELIANTHUS TUBEROSUS).

232. Nerveless (enerve) opposed to nerved (Vide 229), as *Climbing Butcher's-broom* (RUSCUS ANDROGYNUS).

233. Sheathed, or lined (lineatum) with depressed nerves, as GLORIOSA SUPERBA.

234. Striated (striatum) lightly hollowed with parallel lines, as *Sea Club-rush* (SCIRPUS MARITIMUS).

235. Furrowed (sulcatum) hollowed with deep lines, as *Iron-coloured Foxglove* (DIGITALIS FERRUGINEA).

236. Veined (venosum) having vessels variously divided, as *Black Bryony* (TAMUS COMMUNIS).

237. Wrinkled (rugosum) filled with wrinkles, as *Officinal Sage* (SALVIA OFFICINALIS).

238. Bullate (bullatum) a wrinkled leaf (Vide No. 237.), with contracted veins, with the other side concave, as *Green-Tea* (THEA VIRIDIS).

239. Pitted (lacunosum) having a depressed disk among interspersed veins, as BRASSICA SUBAUDEA.

Leaves. 240. Veinless (avene) opposed to veiny (Vide No. 246).

241. Dotted, or punctate (punctatum) sprinkled with hollow points, as *Perforated St. John's-wort* (HYPERICUM PERFORATUM).

242. Pimpled, or papillous (papillatum) covered with fleshy points, as the *Ice plant* (MESEMBRYANTHEMUM CRYSTALLINUM).

243. Papulous (papulosum) covered vith vesicular points, as *Viper's Bugloss* (ECHIUM).

Vide Pl. 34. 244. Viscid (viscidum) covered with a tenacious humour, as *Clammy Groundsel* (SENECIO VISCOSUS).

245. Villous (villosum) covered with soft hairs, as *Villous Deadly Carrot* (THAPSIA VILLOSA).

246. Tomentose (tomentosum) covered with interwoven hairs, hardly to be discerned, as *Great Mullein* (VERBASCUM THAPSUS).

247. Silky, or sericeous (sericeum) covered with the softest hairs pressed close down, as *Silver Protea* (PROTEA ARGENTEA).

248. Woolly, or lanated (lanatum) cloathed as with a cobweb, the hairs spontaneously curling, as *Æthiopian Sage* (SALVIA ÆTHIOPS).

249. Bearded (barbatum) beset with parallel hairs, as the *Shrubby-bearded*

Leaves. *Mesembryanthemum* (MESEM-BARBATUM).

250. Hairy, pilose (pilosum) covered with distinct elongated hairs, as *Pilose Hawkweed* (HIERACIUM PILOSUM).

251. Rough, scabrous (scabrum) defended with stiff projecting points, as the HOP.

252. Hispid (hispidus) sprinkled with rigid bristles, as *Bristly-stalked Mesembryanthemum* (MESEM-HISPIDUM).

253. Prickly (aculeatum) armed with prickles, as SOLANUM MAMMOSUM.

254. Strigose (strigose) armed with stiff lanceolate prickles, as ANCHUSA STRIGOSA;—*stinging* and *powdered* are added by some.

12. *Expansion.* Vide Pl. 35. 255. Flat (planum) having an equal superficies, as *Climbing Butcher's-broom* (RUSCUS ANDROGYNUS).

256. Channelled, or caniculate (caniculatum) hollowed above longitudinally with a deep furrow, as *Virginian Spiderwort* (TRADESCANTIA VIRGINIANA).

257. Concave (concavum) having a margin narrower than the disk, and the disk depressed, as PELARGONIUM PELTATUM.

258. Convex, having a margin narrower than the disk, with the disk elevated, as MARTYNEA PERENNIS.

259. Cowled, cuculated (cuculatum) the

Leaves. sides conniving at the base, but dilated at the apex, as GERANIUM CUCULATUM.

260. Plaited, or plicate (plicatum) the disk alternately bent in acute folds, as *White Hellebore* (VERATRUM ALBUM).

261. Waved, or undulate (undulatum) the disk alternately bent in obtuse folds, as ALETRIS CAPENSIS.

262. Curled, or crisped (crispum) with a luxuriant margin, so that the disk comes out longer than its midriff, as *Curl-leaved Mallow* (MALVA CRISPA).

263. Perforated (perforatum) open cuts, as *Perforated Dragon* (DRACONTIUM PERTUSUM).

13. *Substance.* Vide Pl. 36.

264. Membranaceous (membranaceum) stiff, like parchment, as *Indian Reed* (CANNA INDICA).

265. Scariose (scariosum) the substance dry, and sonorous to the touch.

266. Gibbous (gibbum) both surfaces convex, from abundance of pulpy matter in the middle, as *Flat-leaved Cacalea* (CACALEA FICOIDES).

267. Round, cylindrical, or columnar (teres) nearly round, as the *Onion* (ALLIUM CEPA).

268. Depressed (depressum) pulpy, with the disk more flattened than the sides,

as *Depressed Mesembryanthemum* (MESEM-DEPRESSUM).

269. Compressed (compressum) pulpy, with sides more flattened than the disk, *Compressed Mesembryanthemum* (MESEM-COMPRESSUM).

270. Keeled (carinatum) the under part of the disk prominent, longitudinally, as ALOE DISTICHA.

271. Compact (compactum) composed of a solid substance, as *Compact Rhubarb* (RHEUM COMPACTUM).

272. Tubular (tubulosum) internally concave or hollow, as *Purple-flowered Side-saddle flower* (SARRACENIA PURPUREA).

273. Pulpy (pulposum) filled with a tenaceous material, as *Succotrine Aloe* (ALOE SUCCOTRINA).

274. Fleshy (carnosum) internally filled with a more solid pulp, as *House-leek* (SEMPERVIVUM TECTORUM).

275. Three-sided, or triquetrous (triquetrum) three longitudinal sides in a subulate leaf, as *Flowering Rush* (BUTOMUS UMBELLATUS).

276. Two-edged, or ancipitate (anceps) with two prominent longitudinal angles, the disk somewhat convex, as BERMUDA SISYRINCHIUM.

277. Tongue-shaped, or lingulate (lingulatum) linear, fleshy, beneath convex, as ALOE DISTICHA.

Leaves. 288.*Sword-shaped, or ensiform, two-edged, gradually tapering from the base to the apex, as ALETRIS UVARIA.

289. Subulate, or awl-shaped (subulatum) linear at the base, and attenuated towards the apex, as MESEMBRYANTHEMUM BICOLOR.

290. Sabre-shaped, or acinaciform (acinaciforme) compressed, fleshy, one margin convexed, thin, the other more straight and thicker, as MESEM. ACINACIFORME.

291. Hatchet-shaped, or dolabriform (dolabriforme) compressed, roundish, outwardly gibbous, with the edge sharp and roundish beneath, as MESEM. DOLABRIFORME.

14. *Duration.* 292. Deciduous (deciduum) falling off at the end of one summer.

293. Caducous (caducum) falling off early, certainly not remaining a whole summer.

294. Persisting, permanent, or abiding, (persistens) not falling off at the end of summer.

295. Perennial (perenne) flourishing for many years.

296. Evergreen (sempervivens) flourishing at all times of the year.

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* From page 27 to 32, there has been an error in the marking, as plate 33 has, by mistake of the engraver, been marked 34; hence, 10 must be added to all the numerals in those pages, to make the letter-press and plates correspond.

15. *Composition.* Compound, the petiole supporting more leaves than one.

Vide Pl. 38. 297. Jointed or articulate (articulatum) a leaf growing out of the apex of a leaf, as *Field Horse-tail* (Equisetum arvense).

298. Conjugate (conjugatum) pinnate, with only two lateral leaflets, as *Everlasting Pea* (Lathyrus latifolius).

299. Digitate (digitatum) a simple petiole connecting several leaflets at the apex, as Vitis Agnus Castus.

300. Binate (binatum) digitate, terminated by two leaflets, as Gypsophila Fabago; in *threes*, as Citisus Cajan, and Rhus Lucidum; in *fives*, as Rubus Fruticosus.

301. Pedate (pedatum) the petiole bifid, and connecting many leaflets by the inner side only, as *Dragon Arum* (Arum dracunculus).

302. Pinnate (pinnatum) the petiole simple, connecting many leaflets to its sides.

303. Double-paired, two-paired, or bijugous (bijugum) as *Beech-leaved Mimosa* (M. fagifolia); thrice-paired (trijugum) as *oval-leaved Cassia* (C. Tora); four-paired (quadrijugum) as Cassia Foliata; and so on.

Leaves. a. Pinnate with an odd one (cum impari pinnatum) terminated by a single leaflet, as *Mountain Ash* (Sorbus aucuparia).

b. Abruptly pinnate (abrupte pinnatum) neither terminates with a leaflet nor tendril, as *two-flowered Cassia* (C. biflora).

c. Cirrhous or tendrilled (cirrhosum) when terminated by a tendril, as *Common Pea* (Pisum sativum).

d. *Oppositely* (foliolis oppositis) the leaflets opposite, as Cassia Biflora.

Vide Pl. 39. e. Alternately (foliolis alternis), as Amorpha Indigophera.

f. *Interruptedly* (foliis interruptis) the alternate leaflets smallest, as *Common Agrimony* (Agrimonia eupatorium).

g. *Decursively* (foliis decursivis) having the leaflets running down the petiole, as Great Honey Flower.

h. *Articulately*, as Fragraria fragoda.

11. *Decompound.* Doubly compound, as Ranunculus Bulbosus.

304. Bigeminate (bigeminum) the petiole dichotomous, connecting several leaflets at the apex, as *Four-leaved Mimosa* (Mimosa unguis cati.)

305. Biternate (biternatum) twice ternate, as *Alpine Barrenwort* (Epimedium Alpinum).

Leaves.
Vide Pl. 40.

306. Bipinnate (bipinnatum) twice pinnate, as GUILANDINA DIOICA; ending *with an odd leaf, ditto.*

307. Tergeminate (tergeminum) triply-geminate, a bifid petiole bearing on each apex two leaflets, and moreover two leaflets at the fork of the common petiole, as RUTA GRAVEOLENS, and FUMARIA LUTEA *(Yellow Fumitory).*

308. Triternate (triternatum) thrice ternate, as ARALIA NUDICAULIS.

309. Tripinnate (tripinnatum) thrice pinnate.

PROPS *(Fulcra)* the appendage to Plants for their better sustentation.

310. Petiole (petiolus) the fulcre that supports the leaf.

311. Stipule (stipula) a scale standing at the base of nascent petioles.

312. Tendril, or cirrhus (cirrhus), a spiral filiform bond, by which a plant is fixed to another.

314. Pubescence (pubes) every kind of hairiness observed in plants.

315. Arms (arma) points driving away animals, lest they should injure the plant.

316. Bractea (bractea) the floral-leaf, in appearance differing from other leaves.

Props. 317. Peduncle (pedunculus) the fulcrum which supports the fructification.

PETIOLES *(Petioli)* Vide 310.

Varying in 1. *Figure.* Vide Pl. 41.

318. Linear (Linearis) every where of equal breadth, as the *Lemon* (Citrus medica).

319. Winged (alatus) dilated at the side, as the *Orange* (Citrus aurantium).

320. Club-shaped (clavatus) thicker towards the apex, as *Floating Water Caltrops* (Trapa natans).

321. Membranous (membranaceus) flattened, as *Fennel* (Anethum fœniculum).

322. Circular (teres) nearly round, as *Canada Moon-seed* (Menispermum Canadense).

323. Semi-circular (semiteres) as *Sweet-scented Violet* (Viola odorata).

324. Triquetrous (triqueter) three flat sides, as the Flowering Rush ; *Channelled*, as Monk's Hood.

2. *Magnitude.* Vide Pl. 42.

325. Very short (brevissimus) much shorter than the leaf, as *Garlic-scented Guinea-hen-weed* (Petiveria allearea).

326. Short (brevis) not so long as the leaf, as *Curl-leaved Dock* (Rumex crispus).

Petioles.

327. Middle-sized (mediocris) as long as the leaf, as the Hop.

328. Long (longus) longer than the leaf, as *Pondweed* (Potamogeton natans).

329. Very long (longissimus) much longer than the leaf, as *Canadian Assarabacca* (Asarum Canadense).

3. *Insertion.*
Vide Pl. 43.

330. Inserted (insertus) sitting perpendicular to the branch, as *Palmated Rhubarb* (Rheum palmatum).

331. Adnate (adnatus) joined by the upper surface to the branch.

332. Decurrent (decurrens) the base of the petiole running down the stem, as the Everlasting Pea.

333. Amplexicaul and stem-clasping (amplexicaulis) surrounding the stem with its base, as Sagittaria, and Canna Indica.

334. Appendaged (appendiculatus) having leafy films at its base, as Ononis Cernua; *Sheathed,* as Indian Reed.

4. *Direction.*
Vide Pl. 44.

335. Erect (erectus) almost in a perpendicular line, as Chrysanthemum Serotinum.

336. Spreading (patens) rising from the stem at an acute angle, as Nerium Oleander.

337. Assurgent (assurgens) arch-wise erect, first declining and then becoming erect, as Sida Radiata.

Petioles. 338. Recurved (recurvatus) bent down so that the bow, or convexity is upwards, as the *Passion Flower* (PASSIFLORA).

5. *Surface.* Vide Pl. 45. 339. Smooth (glaber) with a slippery surface, as *Canada Moon-seed* (MENISPERMUM CANADENSE).

340. Prickly (aculeatus) armed with *prickles,* as the BRAMBLE;—thorny, armed with *Thorns,* as TOURNEFORTIA SPINOSA.

341. Naked (nudus) without hairs, or bristles (vide Fig. 339).

342. Jointed (articulatus) intercepted with joints, as *Lentiscus-leaved Fagara* (F. PTEROTA).

343. Spinescent (spinescens) growing hard and pointed.

STIPULES (*Stipulæ*). Vide No. 311.

Vide Pl. 46. 344. In pairs (geminæ) two together, as EVERLASTING PEA.

345. Solitary, or single (solitariæ) single, as MELIANTHUS MAJOR.

346. None (nullæ).

347. Lateral (laterales) inserted on the sides, as PASSIFLORA CŒRULEA.

348. Intrafoliaceous (interfoliaceæ) placed beneath the leaf.

349. Opposite the leaf (oppositifoliæ) as MERCURIALIS PERENNIS.

350. CADUCOUS (caducæ) falling soon,

before the end of summer, as MORUS NIGER.

351. Deciduous (deciduæ) falling off at the end of one summer.

352. Permanent (persistentes) remaining after defoliation.

353. Spinescent (spinescentes) becoming hard and sharp, as PETIVERIA ALLIACEA.

354. Sessile (sessiles) sitting immediately on the stem, as SORBUS AUCUPARIA.

355. Adnate (adnatæ) united to the stem, as ROSA CANINA.

356. Decurrent (decurrentes) the base extended along the stem, as CLIFFORTIA ILLICIFOLIA.

357. Vaginant (vaginantes) sheathing the stem.

358. Subulate (subulates) awl-shaped, as PETIVERIA ALLIACEA.

359. Lanceolate (lanceolatæ) oblong, tapering at each end.

360. Sagittate (sagittatæ) triangular with posterior acute angles, and an indentation at the base.

361. Lunate (lunatæ) crescent-shaped, roundish, hollowed out at the base, and without posterior angles, as HUMULUS LUPULUS.

362. Erect (erectæ) placed almost perpendicularly.

363. Spreading (patentes) rising from the

Stipules. stem at an acute angle, as PLATANUS OCCIDENTALIS.

364. Very intire (intergerrimæ) the margin linear and not in the least cut.

365. Serrate (serratæ) all the incisions in the margin looking at the extremity, as SORBUS AUCUPARIA.

366. Ciliate (ciliatæ) having parallel bristles disposed along the margin longitudinally, as *Red-topped Sage* (SALVIA HORMINUM.)

367. Dentate (dentatæ) with remote spreading points along the margin.

368. Cleft (fissæ) divided by linear indentations, the margins being straight, as AGRIMONIA EUROPŒA.

TENDRIL. (Vide No. 312.)

Vide Fig. 48. 369. Axillary (axillaris) inserted at the base of the leaf.

370. Foliar (foliaris) sitting on a leaf, as GLORIOSA SUPERBA.

371. Petiolar (petiolaris) sitting on a petiole, as PISUM SATIVUM.

372. Peduncular (peduncularis) sitting on a peduncle, as VITIS VINIFERA.

373. Simple (simplex) undivided. (Vide Fig. 368).

374. Trifid (trifidus) divided into three parts. (Vide Fig. 370.)

375. Many-cleft (multifidus) many times divided. (Vide Fig. 372.)

Tendril. 376. Convolute (convolutus) contorted into rings, as Passiflora Cœrulea.

377. Revolute (Revolutus) the spiral taking half way a contrary course. (Vide Fig. 376).

Pubes. PUBESCENCE (*Pubes*). Vide No. 314.

Hairs. Vide Pl. 49. 378. HAIRS (pili) setaceous excretory ducts of the plant, as *Pilose Hawkweed* (Hieracium pilosum).

Wool. 379. WOOL (lana) dense curved hairs, as *Æthiopian Sage* (Salvia Æthiopica).

Beard. 380. BEARD (barba) parallel hairs, as Bearded Fig-Marygold.

Down. 381. DOWN (tomentum) soft interwoven hairs, scarce discernible, as *White Mullein* (Verbascum lychnites).

Strigæ. 382. STRIGÆ (strigæ) hairs somewhat rigid and flat.

Bristles. 383. BRISTLES (setæ) hairs somewhat rigid and round, as *Grain-rooted Saxifrage* (Saxifraga granulata).

384. Simple (simplices) extended longitudinally and undivided, as *Great Melon-thistle* (Cactus melocactus).

385. Hooked (hamosæ) easily adhering to animals, as *Clinging Forskolea* (Forskolea tenacissima).

Vide Pl. 50. 386. Branched (ramosæ) subdivided as it were into branches, as *Æthiopian Sage* (Salvia Æthiopica).

Pubescence. 387. Feathery (plumosæ) hairy and compounded, as Verbascum Lychnites.

388. Stellate (stellatæ) placed crossways, as *Common Buckthorn* (Hippophæ rhamnoides).

Hooks. 389. HOOKS (hami) points with a crooked point, *recurved,* as Forskolea tenacissima; *incurved,* as Arctium Lappa.

Barbs. 390. BARBS (glochidæ) points bent back at the apex, many-toothed, as *Common Hop* (Humulus lupulus); *toothed,* as *Marsh Triglochin* (Triglochin palustre).

Glands. 391. GLANDS (glandulæ) small glands secreting a fluid, as in the *Stock* (Cheiranthus).

Bladders. 392. BLADDERS (utriculi) vessels replete with moisture, appendaged to the leaves, as the *Side-saddle flower* (Sarracenia).

393. Foliaceous (foliacea) inserted in the leaves, as the *Almond Tree* (Amygdalus communis), and Passion-flower.

394. Petiolar (petiolaris) sitting upon the petiole, as the *Blue Passion flower* (Passiflora cœrulea).

395. Peduncular (peduncularis) sitting on the peduncle.

396. Stipular (stipularis) inserted on the stipule, as *Divaricated Mountain*

Pubescence. *Ebony* (BAUHINIA DIVARICATA.)

Viscidness. 397. VISCIDNESS (viscositas) having the quality of a tenaceous humour, as *Clammy Campion* (CUCUBULUS VISCOSUS).

Glutinosity. 398. GLUTINOSITY (glutinositas) having the quality of a slippery fluid, as *Yellow-flowered Sage* (SALVIA GLUTINOSA.)

ARMS (*Arma*). Vide No. 315.

Prickles. Vide Pl. 52. 399. PRICKLES (aculei) pricking points affixed only to the cortex of plants.

400. Straight (recti) without flexure, as SOLANUM MAMMOSUM.

401. Incurved (incurvi) as BRAMBLE.

402. Recurved (recurvi), as *Common Toothach Tree* (XANTHOXYLUM CLAVA HERCULIS).

Forks. 403. FORKS (furcæ), as *Gooseberry* (RIBES GROSSULARIA).

404. Bifid (bifidæ), and trifid (trifidæ).

Thorn. Vide Pl. 53. 405. THORN (spina) a point protruded from the wood of the plant.

406. Terminal (terminalis) placed at the apex of the plant, as *Box-leaved Staff-tree* (CELASTRUS BUXIFOLIUS).

407 Axillary (axillaris) placed betwixt the peduncle of the leaf and stem, as *Black-thorn*, or *Sloe* (PRUNUS SPINOSA).

Arms. 408. Calycine (calycina) sitting upon the calyx, as *Musk Thistle* (CARDUUS NUTANS); *on the Fruit*, as the THORN APPLE.

409. Foliar (foliaris) placed on the leaf, as *Broad-leaved Adam's Needle* (YUCCA GLORIOSA).

410. Simple (simplex) undivided. (Vide No. 407).

411. Divided (divisa) parted at the apex, as *Two-spined Arduina* (ARDUINA BISPINOSA).

Stings. 412. STINGS (stimuli) points, making inflammatory and painful punctures, as *Common Nettle* (URTICA DIOICA).

Vide Pl. 54. BRACTEA (Bracteæ) (Vide No. 316).

413. Coloured (coloratæ) as *Red-topped Sage* (SALVIA HORMINUM).

414. Caducous (caducæ) as GALENIA AFRICANA.

415. Deciduous (deciduæ) as *Virginian Poke* (PHYTOLACCA DECANDRA).

416. Permanent (persistentes) as *Common Lime Tree* (TILIA EUROPŒA).

Tuft. 417. TUFT (coma) bracteas terminating the stem, and remarkable for magnitude, as *Crown Imperial* (FRITILLARIA IMPERIALIS).

Peduncle. PEDUNCLE (*Pedunculi*) (Vide No. 317).

Vide Pl. 55. 418. Simple (simplex) all the peduncles arising from the same receptacles, as

Peduncle.

Scarlet Geranium (Pelargonium sanguineus).

419. Common (communis) common to many flowers, as *Fennel,* (a) *partial,* having pedicels (b).

420. Pedicel (pedicellus) proper, to each floret, attached to the common peduncle, as *Fennel* (b).

Varying.
1. *In Place.*

421. Radical (radicalis) attached to the root, as *Aloe-leaved Water Soldier* (Stratiotes aloides).

Vide Pl. 56.

422. Cauline (caulinus) attached to the stem, as *Many-flowered Solomon's Seal* (Convallaria multiflora.)

423. Rameal (rameus) attached to branches, as *Scarlet-flowered Pentapetes* (P. Phœnicea).

424. Petiolar (petiolaris) attached to the petiole, as *Elm-leaved Turnera* (T. Alnifolia).

Vide Pl. 57.

425. Tendril or clasper-bearing (cirrhiferus) having a tendril, as *Common Vine* (Vitis vinifera).

426. Terminal (terminalis) ending the branch, as *Nine-leaved Coronilla* (Coronilla valentina.)

427. Axillary (axillaris) inserted betwixt the branch or leaf, as *Corn Bindweed* (Convolvulus arvensis).

428. Opposite the leaf (oppositifolius) as *Officinal Comfrey* (Symphytum officinale.)

Peduncle.

429. Side of the flower (lateriflorus) as *Officinal Swallow-wort* (ASCLEPIAS VINCETOXICUM).

430. Within the leaf (interfoliaceus) as *Prickly Butcher's-broom* (RUSCUS ACULEATUS.)

431. Without the leaf (extrafoliaceus).

Vide Pl. 58.
2. *Situation.*

432. Alternate (alternus) first on one side, then on the other, as *Broad-leaved Cluytia* (C. PULCHELLA).

433. Scattered (sparsus) irregularly placed, as *European Nettle-tree* (CELTIS AUSTRALIS).

434. Opposite (oppositus) opposite the leaf, as *Fly Honey-suckle* (LONICERA XYLOSTEUM).

435. Verticillate (verticillatus) as *Yellow Gentian* (GENTIANA LUTEA).

Vide Pl. 59.
3. *Number.*

436. Single (solitarius) as *Large red-flowered Aniseed-tree* (ILLICIUM FLORIDANUM).

437. Double (geminatus) in pairs, as *Scarlet-flowered Pentapetes* (P. PHŒNICIA).

438. Umbellett sessile (umbellula sessilis) little umbel without peduncles, as *Common Dog-wood* (CORNUS SANGUINEUS.)

Vide Pl. 60.
4. *Direction.*

439. Appressed (adpressus) pressed towards the stem, as the *Monk's-hood* (ACONITUM NAPELLUS).

440. Erect (erectus) as *Four-leaved Herb-Paris* (PARIS QUADRIFOLIA).

Peduncle. 441. Patent (patens) spreading, as *Tamarind-leaved Mimosa* (M. TAMARINDIFOLIA).

442. Drooping (cernuus) the apex pointing to the earth, as *Drooping-flowered Trillium* (T. CERNUUM).

443. Crowded (confertus) compacted together, as *Linear-leaved Savory* (SATUREJA JULIANA.)

444. Declined (declinatus) descending archwise, as *Hairy Snake-gourd* (MOMORDICA CHARANTIA.)

445. Ascending (ascendens) ascending archwise, as the PASSION FLOWER.

Vide Pl. 61. 446. Nodding (nutans) less bent down than drooping. Vide Fig. 442.

447. Flaccid (flaccidus) weak, so as to appear to hang down from the weight of the flower, as the MOMORDICA CHARANTIA.

448. Pendulous (pendulus) loose, so as to tend downwards, as the *Laburnum* (CYTISIS LABURNUM).

449. Straight (strictus) stiff, as *Annual Xeranthemum* (X. ANNUUM).

450. Flexuose (flexuosus) bending from flower to flower, as *Narrow-leaved Tillandsia* (TILLANDSIA TENUIFOLIA).

451. Retrofracted (retrofractus) appearing as if suddenly bent down by art.

Vide Pl. 62. 452. Round (teres) as *Cultivated Cherry-tree* (PRUNUS CERASSUS).

Peduncle.
Vide Pl. 62.

453. Triquetrous (triqueter) three-sided, as *Bear's-foot* (HELLEBORUS FŒTIDUS).

454. Four-cornered (tetragonus), as *Grass of Parnassus* (PARNASSIA PALUSTRIS).

455. Filiform (filiformis) resembling a thread, as *Yellow-vetchling* (LATHYRUS APHACA).

456. Tapering (attenuatus) gradually lessening, as the *Pontic Rhododendron* (R. PONTICUM).

457. Clubbed (clavatus) considerably thicker towards the top, as *Annual Sunflower* (HELIANTHUS ANNUUS).

458. Incrassated (incrassatus) increasing gradually in thickness towards the extremity, as *Virginian Witch-hazel* (HAMAMELIS VIRGINICA).

Vide Pl. 63.

459. Naked (nudus) without hairs or bristles, as *Smooth Napæa* (N. LÆVIS).

460. Scaly (squamosus) as *Hyssop-leaved Starwort* (ASTER HYSSOPIFOLIUS).

461. Leafy (foliatus) garnished with leaves, as *Shrubby Chironia* (C. FRUTESCENS).

462. Bracteated (bracteatus) furnished with a bractea, as the *Lime-tree* (TILIA EUROPŒA).

463. Geniculate (geniculatus) jointed, as HIBISCUS ZEYLANDICA.

464. Articulated (articulatus) knotted, as MORISONIA AMERICANA.

Vide Pl. 64.

Size is often noticed, as *very short*, a.—*short*, b.—*long*, c.—*very long*, d.

Inflorescence.

465. INFLORESCENCE (inflorescentia) is the manner in which plants are joined to the plant by their peduncles.

Verticil.
Vide Pl. 65, and 66.

466. VERTICIL (verticillus) several flowers surrounding the stem like a ring.

467. Sessile (sessilis) sitting immediately on the stem, as *Yellow-flowered Sage* (SALVIA GLUTINOSA).

468. Peduncled (pedunculatus) furnished with peduncles, as *Black Stinking Horehound* (BALLOTA NIGRA.)

Naked (nudus) without involucre or bractea. Vide Fig. 467.

469. Involucred (involucratus) furnished with an involucre, as *Perennial Yellow Dead-Nettle* (GALEOBDOLON LUTEUM.)

470. Bracteated (bracteatus) furnished with a bractea.

471. Crowded (confertus) the peduncles approximate.

472. Remote (distans) the peduncles distant.

Head.
Vide Pl. 67.

HEAD (capitulum) several flowers collected into a globular form.

473. Roundish (subrotundum) almost globular, as *Clover* (TRIFOLIUM PRATENSE).

Head. 474. Round (globosum) round on every side, as *Great Globe Thistle* (Echinops sphærocephalus).

475. Halved or half-round (dimidiatum) round on one side, flat on the other, as *Dutch Clover* (Trifolium repens).

476. Leafy (foliosum) leaves intermixed with the flower, as *Round-headed Trefoil* (Trifolium glomeratum).

477. Naked (nudum) without leaves or bristles, as *Alpine Trefoil* (Trifolium Alpinum).

Fascicle. FASCICLED (fasciculatum).

478. A bundle (fasciculus) having erect, parallel, fastigiate, and parallel flowers, as Sweet William.

Spike. Vide Pl. 68. 479. SPIKE (spika) alternate sessile flowers, on a common simple peduncle.

480. Simple (simplex) continued, undivided, as Cyperus.

481. Compound (composita) consisting of many spikelets growing on the peduncle, as *English Mercury* (Chenopodium bonus henricus.).

482. Glomerate (glomerata) consisting of spikelets variously heaped together, as *Round-headed Club-rush* (Scirpus holoschœnus).

483. Ovate (ovata) the longitudinal diameter exceeding the transverse, as *Oval-spiked Hares'-tail Grass* (Lagurus ovatus).

Spike. 484. Ventricose (ventricosa) gibbous at the side, as *Common Canary-Grass* (Phalaris canariensis).

485. Cylindrical (cylindrica) every where of the same diameter, as *Meadow Cat's-tail Grass* (Phleum pratense).

Vide Pl. 69. One-sided (secunda) as *Mat Grass* (Nardus stricta).

486. Interrupted (interrupta) consisting of smaller alternate distant spikes, as *Spreading Chaff-flower* (Achyranthes aspera).

487. Imbricated (imbricata) covering half of each other in turn, as *Spanish Sage* (Salvia Hispanica).

488. Articulated (articulata) with internodes and joints, as Tripsacum Dactyloides.

489. Branched (ramosa) variously divided, as *Broad-leaved Cotton Grass* (Eriophorum polystachyon).

490. Linear (linearis) every where of an equal breadth, as *Couch Grass* (Triticum repens).

Vide Pl. 70. 491. Ciliate (ciliata) having parallel bristles disposed along the margin longitudinally, as Meadow Cat's-tail Grass.

492. Foliaceous (foliacea) intermixed with leaves.

493. Tufted (comosa) terminated by leaflets, as *Betony-leaved Vervain* (Verbena orubica).

Corymbus.
Vide Pl. 71.

494. CORYMBUS (corymbus) formed from a spike, each flower being furnished with its proper peduncle and proportionally elevated.

495. Simple (simplex) when each flower is furnished with its proper peduncle, as *Virginian Guelder-rose* (SPIRÆA OPULIFOLIA).

496. Compound (compositus) when all the flowers are elevated upon pedicels, sitting upon the common peduncles, as *Common Ragwort* (SENECIO JACOBÆA).

Thyrse.
Vide Pl. 72.

497. THYRSE (thyrsus) a panicle condensed into an ovate form.

498. Spread (diffusus) scattered, as *Common Lilac* (SYRINGA VULGARIS).

499. Leafy (foliatus) clothed with leaves, as *White-flowered Colt's-foot* (TUSSILAGO ALBA).

Raceme.
Vide Pl. 73.

491. RACEME (racemus) a peduncle furnished with lateral branches.

492. Simple (simplex) undivided, as *Virginian Poke* (PHYTOLACCA DECANDRA).

493. Compound (compositus) divided into several, as the *Vine* (VITIS VINIFERA).

494. Unilateral (unilateralis) one-sided, all the flowers inserted on one side, as *Peruvian Turnsole* (HELIOTROPIUM PERUVIANUM).

495. One-rowed (secundus) all the flowers

Raceme. turned to one side, as *Everlasting Pea* (LATHYRUS LATIFOLIA).

Vide Pl. 74. 496. Pedate (pedatus) the peduncle bifid, and connecting several flowers by the inner side only, as LIMONIUM SINUATUM.

497. Conjugate (conjugatus) ditto, with two flowers yoked together. Vide Fig. 496.

498. Erect (erectus) placed almost in the perpendicular line, as *Brompton Stock* (CHEIRANTHUS INCANUS).

499. Lax (laxus) or limber, easily bent into a bow, as *Common Laburnum* (CYTISUS LABURNUM).

500. Depending (dependens) or dependent, looking straight on the earth, as *Red Currants* (RIBES RUBRA).

501. Naked (nudus) without leaves. Vide Fig. 500.

502. Leafy (foliatus) furnished with leaves, as *Common Strawberry-tree* (ARBUTUS UNEDO).

Panicle.
Vide Pl. 75. PANICLE (panicula) scattered flowers on differently divided peduncles.

501.*Diffuse (diffusa) having the pedicels spreading out more than simply *spreading* (patens) and irregularly, as *Wild Oat* (AVENA FATUA).

502.*Compact (congesta) crowded or heaped, having numerous florets, as *Soft Brome Grass* (BROMUS MOLLIS).

Fructification. 503. FRUCTIFICATION (fructificatio) a temporary part of vegetables for the purpose of reproduction.

Calyx.
Vide Pl. 76. 504. CALYX (calyx) the bark of the plant, present in the fructification.

Perianth. 505. PERIANTH (perianthium) a calyx, contiguous to the fructification.

506. ——— of the fructification (fructificationis) including the stamens and germen, as *Common Bramble* (RUBUS FRUTICOSUS).

507. ——— of the flower (floris) containing the stamens, but not the germen, as *Dog's Mercury* (MERCURIALIS PERENNIS) a stameniferous flower.

508. ——— of the fruit (fructus) containing the germen, without the stamens, *ditto*, pistilliferous flower.

509. ——— proper (proprium) belonging to a single flower, as *Hemlock Water-drop-wort* (ŒNANTHE CROCATA).

510. One-leaved, or monophyllous (monophyllum) consisting of one foliole, or leaf, as the *Orange* (CITUS AURANTIUM).

511. Many-leaved, or polyphyllous (polyphyllum) consisting of several leaves, as *Smooth Old-man's-beard* (GEROPOGON GLABER).

512. Bifid, a. (bifidum) three-cleft (trifidum) as GREAT CURLED DOCK, b. four-

Perianth. cleft, c. (quadrifidum) as PROCUMBENT PEARL-WORT; five-cleft, d. (quinquefidum) as GREATER STICHWORT; many-cleft, e. (multifidum) as *Smooth-seeded Horn-wort* (CERATOPHYLLUM DEMERSUM).

513. Two-parted, or bipartite (bipartitum) as TUBEROSE MOSCHATEL; three-parted, a. (tripartitum) as DOG'S MERCURY; four-parted, b. (quadripartitum) as MULBERRY; five-parted, c. (quinquepartitum) as *Grass of Parnassus* (PARNASSIA PALUSTRIS).

514. Intire (integer) not cut, as *Sand Box-tree* (HURA CREPITANS).

515. Tubular (tubulosum) internally hollow, as MONARDA FISTULOSA.

516. Spreading (patens) rising from the flower at an acute angle, as *Herb Paris* (PARIS QUADRIFOLIA).

Vide Pl. 77. 517. Reflexed (reflexum) the parts bent back, as GLOBE THISTLE.

518. Inflated (inflatum) hollow like a bladder, as *Alder-leaved Hermannia* (H. ALNIFOLIA).

519. Short (abbreviatum) or abbreviated, not as long as the tube of the corol.

520. Long (longum) longer than the tube of the corol, as *Biennial-tree Primrose* (ŒNOTHERA BIENNIS.)

521. Obtuse (obtusum) terminated within the segment of a circle, as *Common-Rose-root* (RHODIOLA ROSEA).

Perianth.

522. Acute (acutum) terminating in an acute angle, as *Great-curled Dock* (RUMEX CRISPUS).

523. Thorny (spinosum) armed with thorns, as *Star-thistle* (CENTAUREA CALCITRAPA).

524. Prickly (aculeatum) armed with prickles, as *Fuller's Teasel* (DIPSACUS FULLONUM).

525. Above, or superior (superum) when the germen is under the calyx, as *Indian Reed* (CANNA INDICA).

526. Beneath, or inferior (inferum) when the germen is within the calyx, as *Caper Euphorbia* (E. LATHYRIS).

527. Common (communis), (Vide Fig. 523) containing several flowers collected together.

528. Imbricated (imbricatum) (Vide Fig. 523) covered with scales placed over each other.

529. Squarrose (squarrosum) with scales diverging on every side, as *Plowman's Spikenard* (CONYZA SQUARROSA).

530. Scariose (scariosum) composed of a substance, dry, parched, and sounding when touched, as *Eastern Centaury* (CENTAUREA ORIENTALIS.)

531. Turbinatum (turbinatum) or top-shaped, inversely conical, as *Buck Wheat* (POLYGONUM FRAGOPYRUM).

Perianth.

532. Gibbous (gibbum) having two surfaces convex, as *Annual Honesty* (Lunaria annua).

533. Cylindrical (cylindricum) round, without angles, as *Red-stalked Erigeron* (E. siculum).

534. Calyculate (calyculatum) or calycled, surrounded with another smaller calyx at the base, as *Purple-flowered Prenanthes* (P. purpurea).

Involucre.
Vide Pl. 78.

535. INVOLUCRE (involucrum) a calyx remote from the flower.

536. Universal (universalis) placed beneath an universal umbel, as Marsh Selinum.

537. Partial (partiale) placed beneath a partial umbel. (Vide Fig. 536).

538. Proper (proprium) placed beneath each flower, as *Common Blue Passion-flower* (Passiflora cœrulea).

Glume.
Vide Pl. 79.

539. GLUME (gluma) the calyx of a grass with embracing valves.

540. One-flowered (uniflora) as Sweet Vernal Grass; and so on, two-flowered (biflora); three-flowered (triflora); many-flowered (multiflora), as *Wild Oats* (Avena fatua).

541. One-valved (univalvis), two-valved (bivalvis), a. as Scirpus Lacustris.

Three-valved (trivalvis), b. as Ca-

Glume. NARY GRASS; many-valved (multivalvis) as BOBARTIA INDICA.

542. Coloured (colorata) of any colour but green, as MAT GRASS.

543. Smooth (glabra) having a slippery surface, *ditto.*

544. Hispid (hispida) beset with rigid bristles, as BOBARTIA INDICA.

545. Unarmed (nudica) without awn, as MILLET GRASS.

546. Awned (aristata) having an awn.

547. An awn (arista) a subulate thorn fixed on the glume.

548. Terminal (terminalis) or terminating, fixed to the top of the glume, as *Feather Grass* (STIPA PINNATA).

549. Dorsal (dorsalis) fixed on the outside of the glume, as *Sweet Vernal Grass* (ANTHOXANTHUM ODORATUM).

550. Twisted (tortilis) twisted like a cord, as WILD OAT.

Ament. Vide Pl. 80. 551. AMENT (amentum) consisting of a common, chaffy, gemmaceous receptacle, as HAZEL.

Spathe. 552. SPATHE (spatha) a calyx bursting longitudinally, having only one leaf, as *Wake Robin*) ARUM MACULATUM).

553. One-valved (univalvis).

554. Two-valved, having two leaves, as *Flowering Rush* (BUTOMUS UMBELLATUS).

Calyptra. 555. CALYPTRA (calyptra) the calyx of a moss.

Calyptra.

556. Straight (recta) on every side equal.

557. Oblique (obliqua) bent on one side, as Bryum Cæspitosum.

Volve.

558. VOLVE (volva) or curtain, the membranous calyx of a fungus.

559. Approximate (approximata) near the head or pileus, as *Field Mushroom* (Agaricus cumpestris).

560. Very remote (remotissima) distant from the head or pileus.

Corolla.
Vide Pl. 81.

561. COROLLA (corolla) the inner bark or liber of the plant, present in the flower.

562. One-petalled, or monopetalous (monopetala) composed of a single petal, as *Annual Worm-grass* (Spigelia anthelmintica).

563. Two-petalled, or dipetalous (dipetala) two petals, as *Prickly Atraphaxis* (A. spinosa).

564. Three-petalled, or tripetalous (tripetala) three petals, as *Virginian Spider-wort* (Tradescantia Virginica).

565. Four-petalled, or tetrapetalous (tetrapetala) four petals, as Brompton Stock.

566. Five-petalled, or quinquepetalous (quinquepetala) five petals, as *White-beam Hawthorn* (Cratægus aria).

567. Six-petalled, or hexapetalous (hexapetala) six petals, as *Poetic Narcissus* (N. poeticus).

Corolla.

568. Many-petalled, or polypetalous (polypetala) many petals, as *Spring Adonis* (A. VERNALIS).

569. Tube (tubus) the lower hollow part of a one-petalled corolla, as *Cowslip* (PRIMULA OFFICINALIS.)

570. Claw (unguis) the lower part of a many-petalled corolla, fixed to the receptacle, as STOCK.

571. Limb (limbus) the upper dilated part of a one-petalled corolla, as the COWSLIP.

572. Lamina (lamina) the upper spreading part of a many-petalled corolla, as the STOCK.

573. Regular (regularis) equal in the figure, magnitude, and proportion of the parts, as Fig. 565.

574. Irregular (irregularis) the parts of the limbus, or lamina, differing in figure, magnitude, and proportion, as VIOLET.

575. Unequal (inæqualis) when the parts correspond in proportion, but not in size, as *Canada Rhodora* (R. CANADENSIS).

576. Globular (globosa) a globose resembling a globe, as HEATH.

577. Bell-shaped (campanulata) or campanulate, ventricose without a tube, as *Canterbury Bell* (CAMPANULA TRACHELIUM).

578. Funnel-shaped (infundibuliformis)

Corolla. conical, fixed upon a tube, as *Officinal Comfrey* (Symphatum officinale).

579. Salver-shaped (hypocrateriformis) or hypocrateriform, flat, fixed upon a tube, as *Narrow-leaved Kalmia* (Kalmia angustifolia).

Vide Pl. 82. 580. Rotate, or wheel-shaped (rotata) flat, without a tube, as *Winter Cherry* (Solanum pseudo-capsicum).

581. Ringent (ringens) irregular, gaping with two lips, as *Common Sage* (Salvia officinalis).

582. Helmet of a ringent corolla (galea ringentis corollæ) the upper lip, as *Wolf's-bane* (Aconitum napellus).

583. The lip (labium) is frequently used to denote the lower lip.

584. Throat (faux) the opening between the segment of the corol, as the termination of the tube, as Fig. 586.

585. The gape (rictus) the opening betwixt the lips, as Fig. 586.

586. Personate (personata) ringent, but with the palate closed, as *Common Purple Fox-glove* (Digitalis purpurea.)

587. Papilionaceous (papilionacea) irregular, consisting of keel, standard, and wings, as Everlasting Pea.

589 Keel (carina) the lowest petal, boat-shaped. (Vide No. 587.)

Corolla.

590. Standard (vexillum) the upper petal ascending. (Vide No. 587.)

591. Wings (alæ) the lateral petals. (Vide No. 587.)

592. Cruciform (cruciata) or crossed, spreading with four equal petals, as Brompton Stock.

593. Concave (concava) having the margin more contracted than the disk, and the disk depressed, as Cratægus Aria.

594. Compound (composita) consisting of several florets, within a common perianth, upon a common receptacle, as Chinese Aster.

595. Radiate (radiata) the florets tubular, nearly equal in the centre, in the disk ligulate florets, as Chinese Aster.

596. Tubular (tubularis) all the florets tubular, as Asparagus.

597. Ligulate (ligulata) or strap-shaped, the petal of the florets flat towards the end, as *Dandelion* (Leontodon).

598. Imbricated (imbricata) placed one partly over the other, as Dandelion.

Nectary.
Vide Pl 83.

590. NECTARY (nectarium) the honey-bearing part, proper to the flower.

600. Proper (proprium) distinct from the petals and other parts, as *Daffodil* (Narcissus pseudo narcissus).

601. Horn-shaped, (corniculatum) or spur-

Nectary. red; or spur-shaped (calcaratum shaped like an horn or spur, as *Columbine* (AQUILEGIA).

602. Petaline (petalinum) inserted in the petal, as the *Crow-foot* or *Butter-cup* (RANUNCULUS).

603. Calycine (calycinum) fixed on the calyx.

604. Receptacular (receptaculaceum) attached to the receptacle, as the STOCK.

605. An hollow in the petal (cyathus in petalum) as CROWN IMPERIAL.

606. Rayed (radiatum) spread out, as NERIUM OLEANDER.

607. Pedicelled (pedunculatum) raised on pedicels, or peduncles, as *Monk's-hood* (ACONITUM).

Stamen.
Vide Pl. 84.

608. STAMEN (stamen) an organ for the formation of farina.

609. FILAMENT, a. (filamentum) the elevating thread, and b. the Anther (anthera) connected to it.

610. Equal (æqualis) all of the same length, as in the TULIP.

611. Unequal (inæqualis) some longer than others, as in the STOCK and DIGITALIS.

612. United (connata) conjoined into one body, as in the GERANIUM.

Anther.

613. ANTHER (anthera) a part of the flowers forming and containing the farina, which, when ripe, bursts.

Anther. 614. Distinct (distincta) not cohering with other anthers, as in most flowers.

615. United (connata) or connate, several joined together, as in *Cardinal-flower* (LOBELIA CARDINALIS).

616. Incumbent (incumbens) fixed by the middle upon the filament, as the WHITE LILY.

617. Lateral (lateralis) connected by the whole side to the filament, as in the INDIAN REED.

618. Globular (globosa) round, as in the COMMON JUNIPER.

619. Twin (didymæ) two together, as in the WILLOW.

620. Awl-shaped (subulata) tapering to a point.

621. Two-horned (bicornis) rising up like two horns, as in the HEATHS.

622. Bursting (erupta) throwing off elastic atoms, called pollen, or fovilla.

Pistillum. For these Vide Plates in Vol. I. 623. PISTILLUM, an organ adhering to the fruit for the reception of the pollen.

624. Above (superum) or superior, the germen placed within the corol, as *Thyrse-flowered Wackendorfia* (W. THYRSIFLORA).

625. Beneath (inferum) the germen placed beneath the corol, as *Tree Primrose* (ŒNOTHERA BIENNIS).

626. Pedicelled (pedunculatum) standing on a pedicel, as *Spurge* (EUPHORBIA).

Pistillum.

627. Filiform (filiforme) like a thread, as *Common Bastard Balm* (MELITTIS MELISSOPHYLLUM).

628. Awl-shaped (subulatum) like an awl.

629. Clubbed (clavatum) like a club, as LEUCOJUM.

630. Erect (erectum) upright.

631. Declining (declinatum) or declined, descending archwise, as *Shrubby Nissolia* (N. FRUTICOSA).

632. Ascending (ascendens) rising archwise upwards, as *Four-leaved Kidney-vetch* (ANTHYLLIS TETRAPHYLLA).

633. Stigma simple (simplex) not cleft, as TEASEL.

634. Bifid (bifidum) divided into two at top, as MARYGOLD.

635. Trifid (trifidum) into three, as *Bermudian Sisyrinchium* (S. BERMUDIANA).

636. Four-cleft (quadrifidum) into four, as BLACK POPLAR.

637. Five-cleft (quinquefidum) into five, as GERANIUM.

638. Many-cleft (multifidum) into many parts, as HOLLYHOCK.

639. Headed (capitatum) stigma large like a head, as POMEGRANATE.

Pericarp.

640. PERICARP (pericarpium) an organ of the plant filled with seeds.

Capsule.

641. A CAPSULE (capsula) an hollow pericarp, opening in a determinate manner, as STICHWORT.

642. Valve (valvula) the coat or covering of the fruit.

Capsule. 643. One-celled (unilocularis) having one cell.

644. Two-celled (bilocularis) a. as LOBELIA; three-celled (trilocularis) b. as SPURGE.

645. Four-celled (quadrilocularis) having four cells, as TREE PRIMROSE.

646. Five-celled (quinquelocularis) five cells, as SARRACENIA.

647. Six-celled (sexlocularis) six cells, as *Birth-wort* (ARISTOLOCHIA).

648. Eight-celled (octolocularis) eight cells, as *Rose-root* (RHODIOLA).

649. Nine-celled (novemlocularis) nine cells, as *Orange* (CITRUS AURANTIUM).

650. Ten-celled (decemlocularis) ten cells, as *Flax* (LINUM).

651. Twin (didyma) two together, as DOG'S MERCURY.

652. Cleft around (circumcissa) as ANAGALLIS.

653. Elastic (elastice erumpens) as IMPATIENS BALSAMINA.

654. Inflated (inflata) as BLADDER SENNA.

Siliqua. 655. SILIQUE (siliqua) a two-valved pericarp, with seeds fixed to both sutures, longer than broad, scarce any style observable at the extremity, as the STOCK.

Silicle. 656. SILICLE (silicula) same as the last, but broader than long, and furnished with a permanent style, as FUMATORY.

Silicle. 657. Torulous (torulosa) or torose, having protuberances here and there, as *Radish* (RAPHANUS).

658. Jointed (articulata) intercepted with knots, as *Procumbent Hypecoum* (H. PROCUMBENS).

659. A parallel dissepiment (dissepimentum parallelum), placed in the same direction with the valves.

660. An articulated ditto (D. articulatum), having joints, as H. PROCUMBENS.

661. Transverse ditto (D. transversum) running across from one valve to the other, as MYRTLE-LEAVED POLYGALA.

Legume. 662. A LEGUME (legumen) a two-valved pericarp, fixed along one suture only.

663. Intercepted with isthmusses (isthmis interceptum) divided transversely within two different cells.

664. Open (apertum) having no divisions.

Follicle. 665. FOLLICLE (folliculus) a one-valved pericarp, opening longitudinally on one side, the seed not fixed to the suture, as PERIPLOCA.

Drupe. 666. DRUPE (drupa) a stuffed valveless pericarp containing a nut, as CHERRY.

667. A dry drupe (drupa sicca) juiceless at last, opposed to a *juicy* (D. succulenta).

Apple. 668. An APPLE (pomum).

Berry. 669. A BERRY (bacca) a stuffed valveless pericarp, containing seeds irregularly disposed.

670. Seeds nestling (semina nidulantia) dispersed throughout the pulp, as *Gooseberry* (RIBES GROSSULARIA).

Strobile. 671. A STROBILE (strobilus) a pericarp formed from an ament, the scales becoming indurated, CONE OF PINE.

Seed. 672. SEED (semen) composed of 1, the *Scar* (HILUM); 2, the *Corcule* (CORCULUM); 3, *Plume* (PLUMULA); 4, *Rostel* (ROSTELLUM); and 5, *Cotyledons,* or *Lobes* (COTYLEDONES) the rudiment of a new plant.

673. Crowned (coronatum) a calycle adhering to the seed, as TEASEL.

Pappus. 674. PAPPUS (pappus) a feathery or hairy crown, as THISTLE.

675. Stipitate (stipitatus) furnished with a thread connecting the pappus and seed.

676. Awned (aristatus) as ANNUAL SUNFLOWER.

677. Naked (nudus) not awned.

678. Hairy (capillaris) or capillary, the hairs undivided, as MOUSE-EARED HAWK-WEED.

679. Feathery (plumosus) consisting of feathered hairs, as PALE-FLOWERED CRICUS.

Tail. 680. The TAIL (cauda) a thread terminating the seed, as ALPINE ATRAGENE.

Hook. 681. HOOK (hamus) the pubescence, whereby it adheres to animals, as *Carrot* (Daucus carota).

Aril. 682. ARIL (arillus) the outer proper coat of the seed, falling off spontaneously, as Common Spindle Tree.

Wing. 683. WING (ala) the membrane affixed to a seed, whereby it flies, and is disseminated, as Scotch Fir.

Nut. 684. NUT (nux) a seed covered with a bony cuticle, as Hazel-nut.

Receptacle. 685. RECEPTACLE (receptaculum) the base, which connects the parts of fructification.

686. Common (commune) sustaining many flowers and their fruit, as Marygold.

687. Punctated (punctatum) punctate or dotted, sprinkled with hollow points, as Dandelion.

688. Hairy (pilosum) covered with distinct long hairs, as Thistle.

689. Chaffy (paleaceum) the florets separated by interposed scales, like chaffs, as Purple Rudbeckia.

690. Flat (planum) vide Fig. 686, with an equal surface.

691. Conic (conicum) or conical, columnar, attenuated towards the apex, as Teasel.

692. Subulate, or awl-shaped (subulatum) linear at the base, tapering towards the point, as Mouse Tail.

693. Of the flower (floris) the base on which the parts of the flower are

Receptacle. fixed, without the germen, as BRAMBLE.

694. Of the fruit (fructus) the base for the fruit, remote from the receptacle of the flower, *ditto.*

695. An aggregate flower (flos aggregatus) here the receptacle is dilated, and the florets somewhat petioled, as SCABIOUS.

Umbel. 696. An UMBEL (umbella) a receptacle from the same centre, elongated into proportionate filiform peduncles.

697. Simple (simplex) all the peduncles arising from one and the same receptacle, as ANDROSACE.

698. Compound (composita) all the peduncles supporting umbellets on the summit, as BUPLEURUM ROTUNDIFOLIUM.

699. Proliferous (prolifera) an umbel more than decompound, as ŒNANTHE CROCATA.

Cyme. 700. CYME (cyma) a receptacle elongated into fastigiate peduncles, from the same universal centre, but with unequal partial ones, as LAURESTINE.

Rachis. 701. RACHIS (rachis) a filiform receptacle, connecting the florets longitudinally, so as to form a spike, as SCOTCH FIR.

Spadix. 702. SPADIX (spadix) the receptacle of a palm and some other plants, issuing from within a spathe, as ARUM.

Spadix. 703. Simple (simplex) not branched.

704. Branched (ramosus) as the BALMS.

Bulb. 705. BULB (bulbus) the hybernacle of a plant, sitting upon the root.

706. Tunicated (tunicatus) or coated, one coat upon another, as the ONION.

707. Scaly (squamosus) imbricated with scales, as the LILY.

708. Cauline (caulinus) sitting on the stem, as the *Bulb-bearing Lily* (LILIUM BULBIFERUM).

Bud. 709. BUD (gemma) or gem, the hybernacle of a plant from the rudiments of future leaves on the stem or branches.

710. Foliar (foliaris) including leaves only, as *Alder-tree* (BETULA ALNUS.)

711. Floral (floralis) including flowers only, as *Hazel* (CORYLUS AVELLANA).

712. Common (communis) including both flowers and leaves, as *Peach-tree* (AMYGDALUS PERSICA).

Vernation. 713. VERNATION (vernatio) the disposition of leaves within the bud.

714. Convolute (convoluta) rolled spirally like a cowl, as CANNA INDICA.

715. Involute (involuta) the edges rolled in spirally on both sides towards the upper surface, as ALISMA PLANTAGO.

716. Revolute (revoluta) the edges rolled in spirally on both sides towards the under surface, as PRIMULA.

717. Obvolute (obvoluta) the margins al-

Vernation.

ternately embracing the straight margin of the opposite leaf, as DIANTHUS.

718. Convolute (convoluta) as PRUNUS CERASUS.

719. Imbricated (imbricata) the leaflets lying crosswise upon one another in their turns, as CAMPANULA.

720. Equitant (equitans) converging with their edges in an opposite situation, so that one includes the other, as IRIS PSEUDACORUS.

721. Plaited (plicata) the leaf folded in various plaits, as VERATRUM ALBUM.

722. Doubly convolute, as ARUM.

723. Opposite involute, as PYRUS MALUS.

724. Alternate involute.

725. Opposite revolute.

726. Doubly convolute.

727. Trebly convolute.

728. Spiral (circinalis) or circinal, the leaf rolled in spirally downwards, so that the apex occupies the centre, as FERNS.*

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[*] For any other terms not inserted here, consult MILNE's *Botanical Dictionary*, or MARTYN's *Language of Botany*.